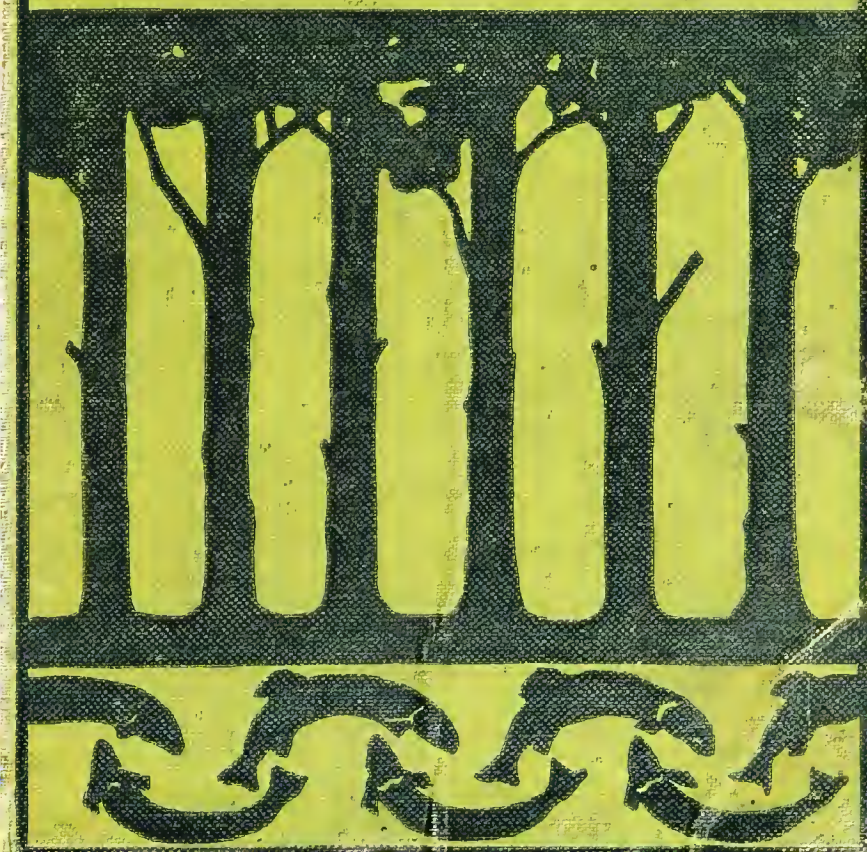
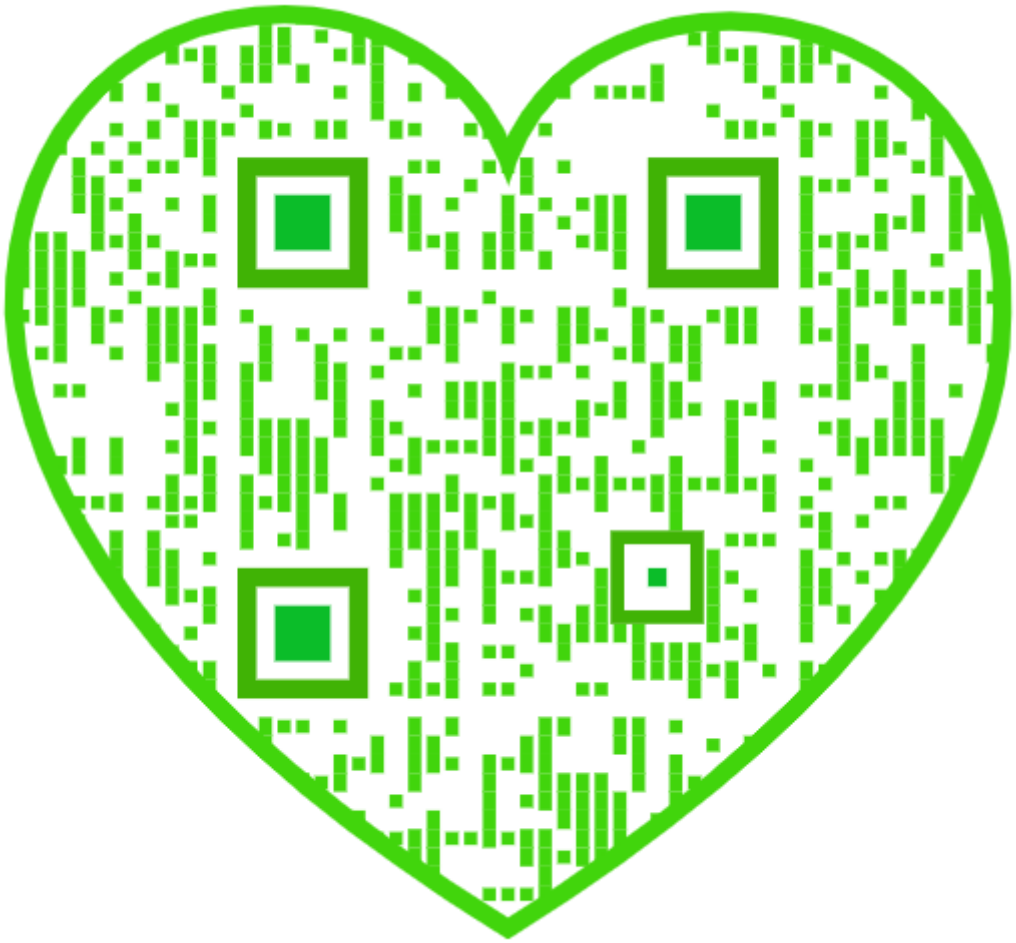
THE HORSE

His Breeding Care & Use

by DAVID BUFFUM





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THE HORSE

HIS BREEDING, CARE AND USE

BY

DAVID BUFFUM

Illustrated with Diagrams

OUTING HANDBOOKS

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PREFACE

During the greater part of my life it has fallen to my lot to have a great deal to do with horses; in breeding them and studying them, in raising them and breaking them to harness, in their care and feeding and in the cure of their vices, when they were so unfortunate as to have them, a large part of my time has been occupied. The knowledge that is gained in the school of experience is generally conceded to be of the most valuable and practical kind, and it has occurred to me that some of the things I have thus been able to learn may be of much value to others.

In handling "inquiries and answers" concerning equine matters for a great American periodical, I have often been surprised to see, in the letters that have come to me from all parts of the country and from people of widely varying means and conditions, how similar they are in kind. Almost invariably the inquiries concern such practical matters as how to feed and stable, how to breed so as to produce a good horse for the purpose intended, how to break to harness, and what to do to cure such vices as running away, shying, kicking, or balking. It has seemed to me that

these inquiries point out a well-defined want and it is concerning these practical matters—matters in which every horse-owner is sure, sooner or later, to want help—that this book is chiefly written.

Perhaps, too, in writing the book, I have been influenced, in some degree, by another and more sentimental reason—which is none other than my love for the horse and a desire to promote horsemanship in the true sense of the word. For in all the vicissitudes of my life I have found the horse one of its greatest blessings, an added joy in times of prosperity and happiness and a comfort and solace in days of disappointment and sorrow. Surely such an animal deserves that comprehension of what he really is, that insight into his nature, and that knowledge of what to expect of him and how to manage him and care for him and bring out the best that is in him that constitute true horsemanship.

DAVID BUFFUM.

Prudence Island, R. I.

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It is upon horses that gods and heroes are painted riding: and men who are able to manage them skilfully are regarded as deserving of admiration. So extremely beautiful and admirable and noble a sight is a horse that bears himself superbly that he fixes the gaze of all who see him, both young and old: no one, indeed, leaves him or is tired of contemplating him as long as he continues to display his magnificent attitudes.

—XENOPHON.

CHAPTER I

WHAT CONSTITUTES A GOOD HORSE

THE horse, of all our domestic animals, has always held the most conspicuous place. It is easy to say that he is more showy, but less useful than the cow or sheep and that he has carried many men into trouble as well as out of it, but the fact remains that he has been celebrated in romance and poetry and song, from the days when he was admired by Solomon and when Job wrote his splendid panegyric on the war-horse, down to the present time.

Is he justly entitled to the place of honor he has thus held, and still holds, in the world? And is he worthy of the attention of the best intellects and the lifetimes of study that, from time to time, have been bestowed upon his breeding, care, and management? Be assured that he is. No man need ever feel that he is misapplying his best powers in studying and improving any of the animals that Nature has given for his use. And if men have sometimes got into trouble through

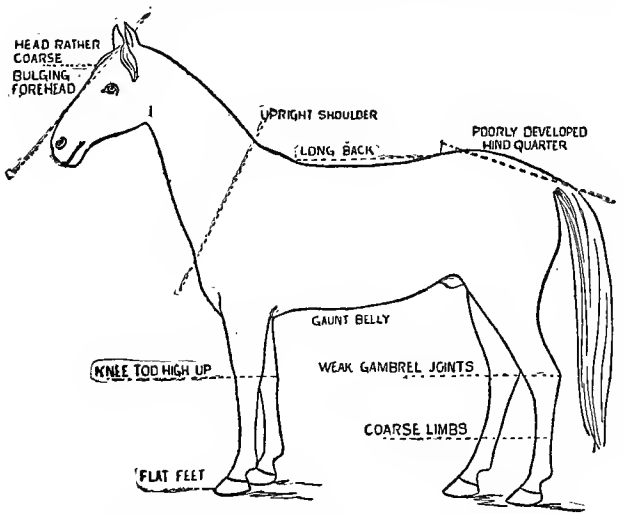
horses, the same might be said of almost any other thing—and, clearly, it is not the fault of the horse.

POINTS OF THE HORSE

The first thing to learn in the science of horsemanship—the very A B C of the matter, as it were—is the points of a good horse. There is no doubt that a great many of my readers already know them and equally no doubt that a great many have gone far beyond this initial chapter. But many times in my life I have been surprised to find men of mature years who had always used horses and even raised a few colts who were not as well up on the matter as one might suppose; and I have met many young men who aspired to be horsemen without having acquired that essential knowledge of the subject that is better learned by a little earnest study in the first place than by painful and costly experience later.

It is self-evident that the most important parts of a horse and the first to examine are his feet and legs. For if he is deficient in this respect, no superiority in other points and no qualities in breeding or disposition can offset it. The best chair or table in the world is useless if it has only three or two legs; and the wisdom of the Arab proverb, "No foot, no horse," is apparent.

For these points, the feet of the horse should be symmetrical, neither too deep nor too flat, but, if failing in either respect, they had better be too deep than too flat. It may often happen that, on soft and level country roads, a flat foot may not occasion much trouble, but it is bad on hard roads



BAD POINTS TO LOOK OUT FOR IN A HORSE

or in cities and is, in all cases, a defect in conformation.

The limbs should be clean—that is, free from fleshiness—but with plenty of bone and substance. The fore legs should be, relatively, short from the fetlock joint to the knee and long from the

knee to the horse's body. This is a very important point, as no horse was ever good for much on the road whose knees were too high up.

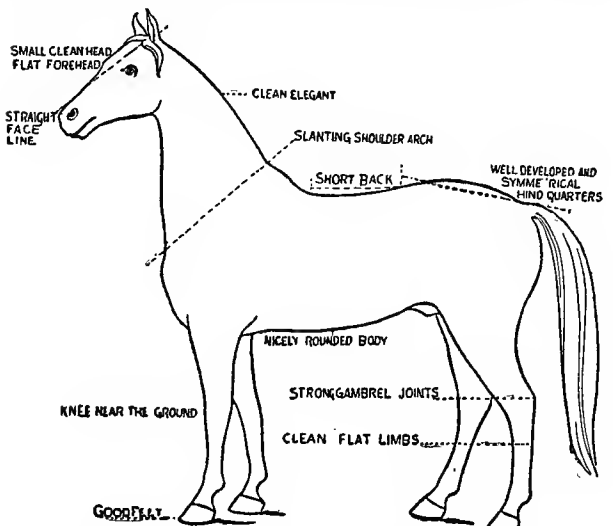
The hind legs should be flat, as well as clean. There is an old saying that they should look as if the skin had been removed, the bone scraped and the skin put back again. This excessive cleanness goes with highly-bred horses and is to be insisted on in all horses that properly belong in that class, such as thoroughbreds, trotters, hackneys, etc. In colder-blooded horses we should demand at least a reasonable approach to it; as much, we may say, as the breed admits of. The gambrel joint should be strong and well developed, never slender or "dandified," and it is also desirable to have it, relatively, near the ground, though this is not as important as the position of the fore knee.

The horse should stand square on his legs with his feet well under him, and his hoofs should be straight fore and aft, neither toeing in nor toeing out.

For the body of the horse, the back should be short.

The hind quarters should be well developed, with the hip-joints fairly well forward. The rump should be, not straight, but rather straight than drooping. That is, the line from the top of

the hips to the root of the tail should be only moderately oblique. I am by no means certain that the straightness or obliquity of this line really makes much difference to the value of the horse; in hundreds that I have examined and seen



PHYSICAL VIRTUES OF A GOOD HORSE

put to severe road and other work I could never perceive that it did. But the moderately oblique line is far more elegant and it is one of the points of equine perfection, and, as such, should always have due consideration.

The shoulders should be slanting, not upright,

and the withers reasonably high. This conformation makes a strong as well as an elegant shoulder.

The body should be nicely rounded, neither gaunt nor "pot-bellied," and should be ribbed well up toward the hips.

The chest should be deep, rather than wide, giving large lung capacity.

The neck should be free from undue fleshiness. It may be either long or short, as far as utility is concerned, the long, of course, being much more elegant and therefore to be preferred on well-bred horses. In either case it should be bent a little just before the point where it joins the head so as to give the conformation that we call "clean cut in the throttle," a structure that gives the breathing apparatus free play.

The head in well-bred horses should be small and almost as clean and bony as the limbs. The face line, viewed from the side, should be straight, not aquiline (or, as in the case of many Arabs, it may be slightly dishing). The forehead should be flat between the eyes. The eyes should be of medium size, set well apart from each other and not too near the top of the head, and the head, when viewed from the front, should slant in a little from the eyes upward. The ears should be fine, thin and pointed and of medium length, and

they should be so set on that, when pointed forward, they are parallel, not slanting apart.

A STANDARD FOR ALL BREEDS

These points of equine perfection are absolute, and therefore they apply to all kinds of horses. This statement, in view of the strikingly different characteristics of different breeds, may, at first, seem wrong, but the experience of a life-time with horses of all types has convinced me of its truth. In judging horses of different types, the difference must be in the application, not in the standard itself; for a good horse must be homogeneous in his make-up, every part in harmony with other parts, and every part must have such modification and proportion as conduces to that end.

For instance, a hackney is a very different horse from a thoroughbred and if he looked even like the best thoroughbred, he would not be a good hackney. But it is just as important that he have a good back, a slanting shoulder, and clean limbs and head as in the case of a thoroughbred. His neck, it is sometimes argued, is so different that it cannot be judged in the same way. So it is different, but if it be examined understandingly it will be found to differ only in such manner and degree as conform to his type and, not one whit

less than in the thoroughbred, it should be free from undue fleshiness, clean and elegant in outline, and so set on as to give a clean-cut throttle. In other words, as a good point is a good one and a bad point a bad one, the same standard must always be used—but applied in such a way as to conform to the modifications that always exist in different types and breeds.

To follow the subject a little further (for it is a vitally important one) the plea for an abatement in certain respects of the requirements for equine perfection is most often heard in connection with draft-horses. These animals, it is urged, serve a different purpose from driving stock and therefore, if they are only large and strong and smooth, a considerable departure from the embodiment of the points we have named makes very little difference. This has not been my experience. As a breeder for many years of both road and draft stock, I have found that the latter, no less than the former, brought the best prices when, apart from the distinguishing marks of their breed, they possessed the greatest number of points of general equine excellence. They were handsomer—and beauty always sells.

As the manager of large stables belonging to the city of New York, I observed constantly that those of our horses which had the best points—

short backs, good shoulders, limbs, and feet, and well-developed hind-quarters—stood up better and lasted longer under their work than the others; and this, too, was often irrespective of size. But that breeders did not realize this—or, what is more likely, that they often sacrificed points to mere size—was evident. For the city was willing to pay good prices for its stock and our horses were selected with care, and yet a large percentage were too long in the back and too upright in the shoulder; a great many had rather poor feet. With a greater range in regard to size these defects could, to a large extent, have been avoided, but our work called for heavy teams and we rarely bought a horse weighing less than sixteen hundred pounds.

It is in the power of man to breed horses large or small and of either a good or a bad conformation. But he greatly errs who is careless in the latter respect or who argues that good points are not always important, whatever the type. For good points were not the invention of man, but were learned by him through centuries of use and study of the horse. They are based upon the mechanism of the animal and were first decided upon by One whose judgment does not err and whose wisdom, whether in matters of horseflesh or otherwise, we cannot question.

ORIGIN OF THE HORSE AND FORMATION OF DIFFERENT BREEDS

In speaking of the origin of the horse and his early development as a domestic animal, I must of necessity be brief, for the subject is too large to discuss at length. But a few facts in this connection have a bearing upon what we can do in the modification of equine types and so have practical value for the breeder too important to go wholly unnoted.

The horse is believed to have originated in southern Asia. His natural size is not very great, averaging about eight hundred pounds, and there is reason to believe that the original type was rather fine than coarse. All the different breeds now in vogue, ranging in fineness from the thoroughbred to the coarsest of the heavy types and in size from the little Shetland to the great draft-horses, trace back to this common origin and are simply modifications of it, wrought by environment or the skill of man, or both. This fact explains the tendency of all breeds to revert to the natural and parent type. In other words, all the variations of the original type which we call breeds have a constant tendency to drop back to where they started.

The breeder of draft-stock, if he becomes care-

less in either mating or feeding, will find each generation a trifle lighter in weight; while the breeder of ponies (if in the temperate zone) will, unless he use equal care, find each generation a trifle heavier. In like manner, as the run is the natural gait of the horse when he is going his fastest, so it is difficult (and, in all probability, will prove impossible) to breed this tendency entirely out of trotters.

Let us take a glance at what has been done by Nature and what by man in the formation of breeds. Breeds of ponies were formed by Nature in very hot or very cold countries, mainly the latter, where the horse will inevitably deteriorate in size. Climate has also some effect in other ways. But by far the greatest number of modifications of the equine type—as the thoroughbred, the trotter, the hackney, and the draft breeds—were formed by the skill of man in selecting, mating, and feeding.

Environment, it is true, cannot be wholly ignored; the dweller in a mountainous country, for instance, is not well situated for raising heavy draft-horses. But as a factor in the formation of different breeds and in the production of speed I have long felt that its importance had been greatly overestimated. Indeed, I have never been able to discover that horses of most of our

types could not be bred successfully in all parts of the temperate zone where farming or stock-raising could be engaged in at all. It is, of course, easier to breed them where the soil is rich and the pasturage abundant, but these accessories are not indispensable. The Arabs have always got along without them and their success as breeders can hardly be questioned.

The development of different breeds from the original type began almost with the dawn of history. The Greeks made much advance in the science and it is evident, if only from the treatise that has come down to us from Xenophon, that their breed was a good one. The Roman horse, notwithstanding the fact that the Romans owed what they knew of horse-breeding—as, indeed, the knowledge of all other arts and sciences—to the Greeks, does not seem to have been as good. He had good, clean limbs and head, but his body was too thick and chunky. This defect doubtless came from a mistaken idea on the part of his breeders as to what constituted equine beauty and grandeur, the wide chest and thick, arched neck seeming to them to present a more imposing appearance than a finer and better type.

Fortunately, we know just how the Roman horse looked. The equestrian statue of Marcus Aurelius, made by an unknown sculptor some sev-

enteen centuries ago and still in perfect condition, gives a true representation of the horse of that period and is well worthy of the study of horsemen.

To the breeders of ancient Greece, notwithstanding Xenophon's splendid and comprehensive treatise, the horseman of to-day really owes very little. Our most precious legacy did not come from them. But there was a race of men, even at that early day, who not only knew the form of the true horse, but also knew, as familiarly as their own souls, the laws and principles by which he was produced—the Arabs. To them be the honor of having, through all the centuries in which so much that was precious was lost, preserved for us in its pristine purity the highest type of horses the world has known.

We owe to the work of the Arab breeders all that we most value in our horses—speed, endurance, disposition, and elegance of form, all came from this source. The thoroughbred, fastest horse in the world at the run, was evolved directly from Arabian blood; and in our trotters, though by a less direct route, it plays an equally important part. Count Orloff used it largely in perfecting the Orloff trotter of Russia—a wonderful animal in many respects; and it is even claimed, with more or less show of reason, that it entered somewhat into the composition of some of our

heavier breeds. All this does not prove that the Arabian is the best horse for all purposes; on the contrary, at the present age of the world, there are only a few uses for which, when bred in his purity, he is best adapted. But Arabian blood is the leaven that leavens the whole lump, the element without which our best breeds of horses could not have been evolved.

CHAPTER II

OUR DEBT TO THE ARAB

IF I seem to be dwelling too long on the blood lines that go to make up our modern breeds, I can only say that, without a clear perception of the why and wherefore of things, any really intelligent grasp of the science of horsemanship is impossible. There are many sea captains who have learned to take observations and work them out by certain formulas which they do not understand, but which, nevertheless, give them the ship's position on the chart. Such men make shift to get around, it is true, but they never become such skilled and expert navigators as those who not only apply the required formula, but know exactly why they do so.

Among the different horses you have owned there have been some whose skin was thinner and whose coat finer than the others, who, when warmed up a little, would show a fine network of veins under the skin, and when put to some unusually long and hard journey would finish with a nerve and energy that were more and more ap-

parent from beginning to end. Do you know why? I am glad to say, though well enough acquainted with the other kind, that I have had many such and am at present using every day a certain mare, thoroughbred, who, when she came into my possession, was so high-strung, so full of nervous energy, that she had never been known to walk a step, and for this reason was never used by her owner or his family, but always exercised by a groom.

Under a little sane treatment (a matter of which I shall have more to say later) she soon learned to go quietly with me. But let the drive be rather longer than common—say ten miles, instead of her usual four or five—and the old spirit and nervous ambition are all back again. And if, on an all-day drive, her muscles become tired, as they needs must, she does not know it and, if I let her, would undoubtedly keep going till she fell in her tracks.

Now this quality, although we have, in breeding, to consider many other things, such as size, style, disposition, and the ability to haul a heavy load, is of all equine attributes, the most kingly; it is the spirit that never quits and never says die. Without it, our race-horses would be valueless and our roadsters no pleasure to use. It is easy enough, and true enough, to say that it is owing to

the "warm blood" a horse has in his veins. But this does not wholly answer the question, nor go quite to the root of the matter. What makes warm blood? What gives to our thoroughbreds and trotters their dead-game qualities?

The answer is oriental blood—Arabian or, if not always literally and strictly that, then of a stock so closely allied as to be practically the same thing. It is true that we have to go back a long distance to find it, but there it is, the starting-point, the source and fountainhead of the highest equine characteristics. Again, why? Because the Arabian horse was bred with reference to speed and endurance and upon the highest standard of conformation and character, from a period so remote that it can hardly be traced. And the fixity of type in any breed—its tendency to reproduce itself unaltered when bred, like sire to like dam, and its prepotency when crossed upon other stock—is in direct proportion to the time it has been bred as a distinct breed without contamination or admixture.

We, whose beards are gray, can recall a time, not so very long ago, either, when the trotter was a colder-blooded horse than he is now and when it was often said, especially by breeders of thoroughbred stock, that the American trotter was of no fixed type and no recognized conformation.

Going back a good deal farther, there was a time when the same thing could be said of the English race-horse. In the main, his breeders were trying to develop him by simply selecting the best and fastest stock. The introduction of certain animals of Eastern breeding—the Byerley Turk and, later, the Curwen Barb and the now famous Darley Arabian—made an impress so marked that their value could not be ignored, but it was not till the days of the Godolphin Arabian, some twenty years later, that the value of oriental blood, as the true source of speed and endurance, was fully recognized and understood by horsemen.

The story of the Godolphin Arabian is one of the most fascinating in equine history. In common with the accounts of much that occurred in that long-ago time some of its details are doubtless open to question and its missing pages filled in by matter that is not well attested. So I give the story for whatever it may be worth, but to those who prefer to doubt it I would point out two things,—first, that any doubt that may be felt of the more romantic incidents with which his story is credited can take nothing away from the honor which is his proven right; and furthermore that the obscurity which would make possible the introduction of fictitious incidents attended only the first part of the horse's career; later, as the

most noted horse of his period, his place in the annals of the English race-horse is a matter of record.

This celebrated horse, whose original name was Scham, was one of several choice animals that were sent as a present to the King of France by the Bey of Tunis. Each, as the proper accompaniment of so princely a gift, had an attendant Moorish slave as groom. Scham's groom, Agba, seems to have been a man thoroughly versed in the horsemanship of his country and fully aware of the great value of his charge, which he had trained and attended from birth. But the present, splendid as it was, made little impression on the French king. The finely-formed, nervous animals were of a type to which he was unaccustomed and of which he knew nothing; differing totally from the heavy French stock, they seemed to him small, insignificant, and, in a word, of little value. He gave the slaves their liberty and directed his master of the stables to sell the horses for what they would bring. Scham was thus acquired by a drunken teamster, who drove a garbage-cart, and put to work in his new owner's business. What became of the others is unknown.

Agba was separated from his charge and for many weeks knew nothing of his whereabouts. But he was keenly alive to the fact that, however

the horse might be underestimated in France, in Tunis, where king and commoner alike were horsemen, he was adjudged of great value. He resolved to find the horse and, if possible, to acquire him by a term of service. Adrift, as he was, in a strange city and knowing but little of its language, the search was no easy matter, and when he finally discovered the horse—which was late one evening, in one of the poorest parts of the city—he found him miserably stabled, covered with harness-galls and sores, and so emaciated as to be hardly recognizable. He threw his arms around the horse's neck and, with many caresses and words of endearment, proceeded to make him as comfortable as the shed and its meager equipment permitted.

While he was thus engaged the carter appeared. Scornfully (and, perhaps, naturally) rejecting Agba's offer to purchase the horse by a term of service, he ordered the Moor out of the stable. The latter had no alternative but to obey, but he by no means gave up his purpose. In some way, and some time so precious an animal must be rescued from his wretched situation; meanwhile, he must be cared for and his strength kept up. By doing sundry odd jobs about the city, Agba managed to pick up a little money and with this, often stinting himself of needed food, he bought grain

and medicine, and surreptitiously visiting Scham at night, he fed him, bathed his wounds, and otherwise afforded him what comfort he could. There is little question that the horse would have died during this period had it not been for this care and attention.

One day an English Quaker, who was staying in Paris, saw Scham pitifully struggling with a load that he could not draw, his master, meanwhile, applying a heavy whip. The Quaker was a horseman, and his practised eye promptly took in the points that the French king had failed to see. Clearly, this was no ordinary horse. Examining him and satisfying himself of his age and soundness, he at once purchased him of the carter. Agba, who soon learned of the event, now sought the Quaker and told his story—with the result that he was hired as groom for Scham and both were sent to the Quaker's country seat in England.

Thus the horse first found himself on English soil and, under good feed and treatment, he soon regained his original beauty and spirit. Indeed, he regained the latter in too large a degree, for the Friend's family, accustomed as they were to colder-blooded animals, became afraid of him and he was sold to a livery-stable keeper, named Rogers. Agba, greatly chagrined at the occurrence, left the Friend's employ and sought a posi-

tion with Rogers, but the latter refused to hire him. This proved a mistake, for Scham was getting more grain than he was used to in his native land and he needed skilful management. Under the care of Rogers's grooms he grew irritable and vicious, and soon Rogers himself could do nothing with him.

Agba now applied a second time for employment, doubtless with the "I told you so" that is always so exasperating to the man who is wrong. Rogers not only refused to hire him, but forbade him the premises. But Agba continued to hang around the stable, visiting the horse when he could, and, to put a stop to this, he was arrested a few nights later when scaling the stable wall with some carrots in his pocket that he had brought for Scham and put into jail on a charge of attempted burglary.

News of this occurrence reached Lord Godolphin, who lived in the near neighborhood and had already heard from the Quaker the story of the horse and the Moor's remarkable devotion to him. He procured Agba's release, took him into his own employ, and bought the horse of Rogers, who was exceedingly glad to get rid of him. Scham, with Agba in charge, was now sent to the Godolphin breeding stables. Abga was overjoyed; the horse was now again owned by a great

sheik. But if the Moor thought, as he doubtless did, that the horse's real value was now recognized, he was soon to learn his error, for Godolphin regarded Scham only as an interesting specimen of the oriental stock, in no wise comparable to the English-bred horses that formed his stud, and had no thought of using him as a sire. The "head of the stud"—the horse that held the place of honor in the stable—was an English-bred stallion named Hobgoblin, and to him the best mares were bred. But Agba had nevertheless determined that, by hook or by crook, Scham should have a chance to show his value as a sire.

There was a mare in the stables, named Roxana, whom it had been arranged to breed to Hobgoblin. She was a daughter of Flying Childers and so a descendant, on one side, of the Darley Arabian and was considered one of the best mares in the stables.

On the day that she was to be bred to Hobgoblin one of the grooms stood holding her near the center of the stable-yard while, from a gate at the farther end, the head groom entered, leading Hobgoblin. A surprise was in store for the head groom. As he passed the enclosure where Scham was kept, its door was suddenly thrown wide open and Scham, with a shrill neigh, rushed out. Owing partly to his past record and partly to stories

told by Agba, Scham was greatly feared in the stables, and when he came thus loose into the yard both grooms deserted their horses and fled. Hobgoblin, however, was more brave; he at once challenged the intruder and in a moment the fight was on.

Not to go into the details of the encounter, it is sufficient to say that Scham, although much smaller, thrashed the big stallion, thrashed him thoroughly and well, thrashed him till he fled the yard, leaving Roxana, who, meanwhile, had been standing quietly by, quite as if awaiting the result of the combat. And if Scham did not realize at first the full extent of his victory, we may be sure that Agba did. For the horse had triumphed both in love and war.

Word of what had taken place was sent to Lord Godolphin, but it was too late, as Roxana was now in foal to Scham. In due season she produced a colt who was named Lath. Lord Godolphin's views now began to change, for, as Lath grew and developed, he proved much superior to any of the get of Hobgoblin; and when, as a two-year-old, he easily beat them all, as well as several other of the best youngsters in England, the value of his sire was established.

The Godolphin Arabian, as Scham was called, now became the most famous sire in England—

not, perhaps, that he was really better than the Arabian sires who preceded him (though of this we cannot judge) but that horsemen now knew, for the first time, what Arabian blood really stood for. The sons and daughters of Arabian sires had always proved superior animals, but breeders knew now that this was not because the imported sires happened, by chance, to be good horses and prepotent getters, but because they were Arabian. Breeders of racing-stock now bred back to the Arabian strain again and again, till there was practically no other blood in their stock. And thus originated the word "thoroughbred," so often misunderstood and misapplied. For thoroughbred means: *Bred thoroughly* to the parent or original stock.

Time, the skill of man and a climate generous of oats and grass have since greatly modified the thoroughbred horse. He is faster now than his Arabian progenitor, and he is larger and does not resemble him very closely in conformation. He presents, in fact, all the characteristics of a distinct and pure type. But he has the same blood-like and aristocratic look, the same clean limbs and head, fine skin, and points of excellence. And as the most ancient type of our modern horses, he is prepotent above all others.

Among American horses, the thoroughbred is

the only one that was developed directly from the Arabian. But indirectly, through thoroughbred crosses, Arabian blood has had an important part in the development of all our best types and breeds of roadsters. In all breeds thus formed the thoroughbred strain—whether late or remote—is unmistakable; most interesting of all, perhaps, is the part it has played in the development of the American trotter.

Any one who will take the trouble to study carefully the pedigrees of our early trotters will be struck by the frequency with which thoroughbred crosses appear. Again and again they recur. And yet the history of the trotter was, in some respects, like that of the thoroughbred; men did not seem to grasp the true significance of this fact, and it was not till Leland Stanford bought Electioneer and bred him to strictly thoroughbred mares that the full value of thoroughbred blood in developing the American trotter as a breed was clearly recognized. Ever since then its effect has been increasingly apparent, and if there were some cold-blooded trotters in the old days, the trotter of the present is a clean and blood-like animal, as game in every way as the thoroughbred of whose blood he so largely partakes.

In thus showing the way in which Arabian blood has come down to our finest modern horses I must

not be understood as implying that its further use would therefore work further improvement. For every distinct breed has its distinct and special purpose. And in all well-established breeds—the test of which always is that they shall reproduce themselves unaltered when bred, like sire to like dam—the time for outcrossing has ceased and they are best improved within their own lines. The most striking instance of this is furnished by the thoroughbred. For, although evolved from the Arabian, he is now, as we have stated, a faster horse; and no one could say that (unless lacking in endurance or some other essential quality, which he surely is not) he could be improved by crossing with anything that is slower.

If a further improvement of the thoroughbred is possible, it must come—as improvement must come in the case of every one of our well-established animal types—not by new crossings, but by the judicious breeding that aims to develop and accentuate the virtues the breed has now.

CHAPTER III

CHOICE OF A BREED AND PRINCIPLES IN BREEDING

THE farmer who desires to raise horses for market should first consider carefully and earnestly his choice of the kind of horses he shall raise. Shall it be draft stock, carriage horses, thoroughbreds, or trotters? There is a demand for all. Draft horses are constantly needed; fine carriage horses were never worth more than they are now, and horses for speed will undoubtedly be wanted as long as civilization endures and our human nature remains what it is.

First of all comes the question of fitness of locality. As we have said, horses can be raised successfully in any place where it is fit to farm at all; nevertheless, when it comes to the choice of breed, the question of environment cannot be wholly ignored. A rough, hilly farm, for instance, where the pasturage is scanty and the animals have to " rustle " more or less for a living, is a very poor place in which to raise heavy draft horses. On the other hand, a rich, level country is especially well suited to such stock, and is equally unsuited

to the raising of little ponies, whose smallness is the measure of their value.

These, it will be observed, are extreme types and for that reason are taken as examples. For all general truths should be accepted with common sense, and it is along the means between these extremes that the drawbacks of an environment which may not, in itself, be the best, can be successfully overcome.

Of equal importance is the matter of market. If a man goes to raising carriage stock in a locality where every one else is raising draft stock, even if the country is equally well adapted to it, he will often find himself somewhat handicapped in selling, simply because the place is known by its principal output and its buyers are looking for draft stock and nothing else. The same thing, of course, applies to the breeder of draft stock in a carriage-horse-breeding neighborhood, and the lesson is simply that it is easier and generally more profitable to go with the stream than against it, although there are many neighborhoods where all kinds of horses are raised and where one can be raised as advantageously as another.

But most of all, in my opinion, should the breeder consider his own personal tastes and inclinations. What kind of horse attracts him most? And how much time and attention will he

bestow upon his horses? Upon the answer to these questions his choice should largely depend.

Next to ponies, which are the least care of all, draft stock is the most easily managed—partly because it is rather less liable to accident than other kinds and partly because, although it must be practically matured to sell, very little is required in the way of preparation beyond having it in nice condition and sufficiently well broken to go safely in harness. Carriage horses, on the other hand, require considerable handling; they must, beyond all things, show well, and an evident greenness will often upset a sale which otherwise would go through all right. All this takes time and attention. Trotting stock also requires more preparation than draft, although, in the case of horses raised expressly for speed, it is usually better to sell when quite young and let the buyer attend to all the training, except the mere breaking to harness.

The man who has not the time and patience for all this careful training or who cannot bring to his work that deep interest that leads him to accept philosophically the greater risks and disappointments that go with the breeding of road stock had best confine himself to the safer and easier task of raising draft horses. Nor need he fear that the field will not furnish ample scope for all

the skill and knowledge he may have. For in draft stock, as in all others, the handsomest and best bring the good prices—the prices that make it worth while and add zest and pleasure to the breeder's work. And the best product, though easier of attainment in some lines than in others, is never to be had without both care and pains.

But if he can bring to the work of raising horses the patience that does not tire and the zeal that does not flag; if he is willing to give to it the best that is in him of intelligence and study and perseverance and realizes that the improvement of the highest of our domestic animals is well worthy of the sacrifice; if he has that innate love of the horse which brings insight into character and nature as well as physical features, then, by all means, let him choose some one of the finer types of road stock. It will yield him a commensurate return in money and also a pleasure and satisfaction that will last as long as he lives.

The prizes to be won in horse-breeding are in proportion to the risks taken—a condition that applies, in fact, to pretty nearly every other industry. And so, as it is easier to raise draft horses, their breeder is more certain of a fairly uniform price. But the highest prices of all go to the best of the finer types, the animals that are the hardest of all to produce.

The kind of horse once chosen, the next step for the breeder is to have a distinct picture in his mind of the type at which he aims and always breed with that end in view. This is the first principle in successful breeding and it can never be neglected with impunity. There is an extremely erroneous idea in many minds that if the breeder has his foundation stock of some pure and distinct breed, he will then be saved this trouble and that all he will have to do is to breed his registered mares to a registered horse of the same kind. But there is no royal road in stock-breeding; and if the same care is not observed in the mating of pure-bred parents that would be in the case of other animals, the stock will surely and swiftly deteriorate.

It seems almost needless to add that the ideal at which the breeder aims should be first of all perfect in conformation. For instance, if you are raising Percherons, in which large size is a desirable feature, have the size, by all means, if possible, but do not sacrifice symmetry to it; symmetry should come first. I am convinced that even the breeders of trotters can make more money in the long run and have a far more satisfactory experience when they breed for type and conformation rather than speed. A great many breeders of trotting stock, in fact, do this. For

speed, however desirable, is not, in its superlative degree, easily attained; whereas beauty, style, action, and finish, which are easier to produce, are always in keen demand and always command a high price.

In deciding what stallion to use, the criterion by which he should always, if possible, be judged is the quality of his get. This is the highest test of the value of any sire, and it is obvious that, if his get is uniformly superior, his individual qualities are of little consequence in comparison. But if, as in the case of a young and untried horse, this proof of his value is wanting, he must be judged by his breeding and his merits as an individual. He should run true to his type, whatever that may be—whether thoroughbred, carriage, or draft—and his pedigree should be free from crosses with other types. This forefends the danger of reversion, or "taking back," which, when a cross-bred stallion is used, is always imminent. Reversion, it is true, may also occur in pure-bred and homogeneously-bred stock, but it will be readily seen that if the foal takes back to a horse of the same kind as his sire but little mischief is done. It is when he takes back to a horse of a different kind that his breeder's calculations are upset.

The mare should always be of somewhat the

same type as the stallion; difference in size does not matter very much, as long as the type is reasonably similar—though, of course, the difference should not be excessive. It is only when the two parents are somewhat alike in type and points that they assimilate nicely and the points of one are modified or strengthened, as the case may be, by those of the other. It is in this way that good points are fixed and perpetuated and along no other road can much progress be made in breeding. The folly, therefore, of mating extremes, in the hope that the good points of one will offset the bad points of the other, should be apparent; if a weedy, long-backed, and loosely put-up mare be bred to a very chunky and compact stallion—her exact opposite in type—the resulting foal is very rarely a happy medium between the two; symmetrical, well-proportioned animals are not produced in that way.

And, likewise, if both parents have good points, the mating of extremes is unwise; it would be foolish, for instance, to breed a thoroughbred mare to a draft stallion or a heavy draft mare to a thoroughbred stallion—although, if we are to choose between evils, the latter is the less objectionable of the two.

Some years ago a farmer came to me with a mare that he wanted to breed. I had three stal-

lions at the time; one of trotting and thorough blood (his sire a trotter, his dam a thoroughbred); one a Percheron, and one a small pony. He looked them all over and decided upon the Percheron as being the heaviest and most compact. The mare was an ill-looking brute—weedy, long-backed, upright-shouldered, cow-hocked, and generally as lacking in good points as anything I ever saw. To my expressed doubt of the wisdom of breeding such an animal her owner averred that her points might be a trifle off, but the horse would set that all right. In point of fact, he did not; I doubt if anything on earth could have set right that combination of horrors, and the resulting colt was such a disgrace to his sire that I objected to the mare being brought back a second time.

In connection with this same stallion I recall another instance which illustrates the point, though in a different way, and that was the breeding to him of a thoroughbred mare. The mare was a beauty and had the best of points, but was, in my opinion, of too slender and delicate a type to be bred to so heavy a horse. The colt, however, proved to be very handsome and, as he grew and developed, was frequently pointed out to me as evidence of my mistaken judgment. Still, I had my doubts; the mingling of types in him was not perfect and his limbs, though beautifully

formed, were not as heavy as they should be for his body. As he matured, this disproportion became more evident and I was not surprised when at four years he threw out a curb on each hind leg.

Both parents of this colt were sound and of sound lineage. The trouble was that the cross was too extreme.

The disposition of a horse is a thing of so much importance that no breeder can afford to overlook it. It is, of course, a well-known fact that many naturally good colts are spoiled and have their tempers soured by bad management. But this does not account, by any means, for all the bad ones. Horses vary in character and disposition as much as human beings do and come by their traits in the same way—by inheritance.

The disposition of a horse seems to be inherited more from his dam than his sire. So true is this that, while I have known many good-dispositioned colts whose sires were not very pleasant animals, I have known very few who were the offspring of peevish, irritable, and treacherous mares. Such mares should never be used for breeding, unless some exceptional circumstance (as the possession of unusual speed or endurance) may make it seem worth while, and even then its expediency may often be doubted. For the disposition of a horse affects his value very materially and there are

enough good mares in the world to raise colts from, without using the bad ones.

The instances I have met with of bad disposition that was clearly the result of inheritance have been numerous. One of them, which seemed to me of special interest, is, I think, worth recounting. A former neighbor of mine, a carpenter by trade, with little knowledge of horses, was seized by a desire to raise a fast horse. For this purpose he bought a black mare, of unknown breeding, but very handsome and rather fast; he bought her for a mere song because she was of a disposition so irritable and treacherous as to render her of little real value. With the judgment to be expected of a man who would buy such an animal for a brood mare, he bred her to a stallion whose disposition was as bad as hers. Thus he had the material for a pretty bad inheritance on both sides.

The result was a filly remarkably handsome and with promise of some speed. The carpenter and his wife made a great pet of her and for three years she showed no ill temper worth mentioning; there was nothing, in fact, to rouse it. Then she was put out to a "breaker" of the old school to be broken to harness. The breaker, as was learned later, had nothing but trouble with her; trouble, too, of so serious a kind that he acquired

a great respect for her teeth and heels. In due time, however, he returned her "nicely broken," as he said. But having, in some remote corner of his make-up, something which he probably considered a conscience and, possibly unwilling for the carpenter to die unwarned, he added that "when you use her, you want to look out sharp, for there's lots of gimp in her."

Had the carpenter been more familiar with the delicate circumlocutions of the "profession," he might have guessed the truth; as it was, he intimated that no amount of "gimp" was too much for him and announced that the next day he was going to "give the natives a surprise party." He did. No sooner had he got his filly hooked up and taken his seat on the gig than she started to run and kick. The carpenter hurled himself out backward, as the quickest way of quitting the combination, and the gig was soon a mass of kindling wood. When the filly was caught, nearly a mile away, she had divested herself of every strap of harness, even of the bridle—"kicked herself stark naked" as the carpenter told me—a performance as extraordinary as it was immodest.

This episode and the fact that the filly had things all her own way seemed to rouse all the latent devil in her nature. She was like a fiend incarnate and bit and kicked to such an extent

that it was with great difficulty she could be fed and cared for. A few days later the carpenter asked me if I would take her and "get her to going gentle." My heart sank at the proposal, but my reputation as a horseman was at stake, so I named my price—a good stiff one—which was at once agreed to. I had treated some colts that were rather bad, but had not seen so extreme a case as this, and she remains on record as the worst horse I ever handled.

She was brought to my barn by three men, one on each side, with long ropes attached to her bridle and one behind with a whip. Her owner followed at a safe distance. His affection for his erstwhile pet had waned and he spoke of his recent back-somersault and of the filly herself in terms unfit for publication.

The methods by which this filly was broken and rendered gentle in harness and stable would require too long a description for this chapter. They will be discussed, in detail, in a chapter on the cure of vices. It is sufficient to say here that we did break her and sent her home, a safe animal to use and care for.

Now all this trouble came from a disposition resulting from bad judgment in the selection of parents. Even if such colts can be subdued and made useful, is it worth while to raise them? I think all will agree with me that it is not.

CHAPTER IV

CURE OF VICES

IN all training of horses—whether breaking to harness, the cure of bad habits, or teaching the tricks of the circus—the first essential is to understand the nature of the horse. For all scientific training is based upon certain features in the horse's mental make-up, and without a knowledge of these features no great success can be made. With it you can do things that the majority of those who use horses cannot do. And yet there is no magic in good horsemanship. It is an art, to be studied and learned like any other art. And although, as in other things, those who have the most natural aptitude for it can become the most proficient, yet its principles are simple and can be mastered by any one.

It was stated by Darwin many years ago that the minds of animals do not differ from those of men in kind, but only in degree, and this is so evident that I do not think any intelligent man, who has had much experience with horses, can doubt it for a moment. The horse has the same emotions as man—love, hate, fear, jealousy—and

his reasoning faculties work in the same way, subject always to the limitations implied by the law already stated, that they do differ, and differ a great deal, in degree. Hence, as we would naturally expect, the horse reasons a great deal more from experience and a great deal less from observation than man does. Indeed, horses that reason from observation, to any noteworthy extent, are rare.

A very familiar evidence of this limitation is seen in the halter-breaking of colts. The little colt, when first tied up, is tied by a halter that he cannot possibly break and (reasoning wholly from this experience and in nowise from what he observes) it does not thereafter occur to him that he can break away, even if tied by a rope that he could snap like a thread. By the same principles he is taught the needed lessons in docility and obedience in other respects. But suppose that some time, when a little restive and tied by a weak halter, he does break his halter-rope. If he fully realizes what he has done, he will try the same thing again, even if tied with a rope strong enough to hold a ship.

It is in this way that bad habits are formed. The well-broken horse is kind because, whenever he attempted to do as he pleased, he found his master's will superior to his own. He learns a

vice because, on some unfortunate occasion, he discovered that in at least that one particular he could do as he pleased after all and that his master was powerless to prevent it. He repeats the vice because, having committed it once with impunity, he feels all confidence that he can do so again. In the cure he must be met on his own ground and the matter reasoned out, by arguments that he cannot fail to understand, till he owns himself mistaken. To do this—to make a vicious horse unlearn the dangerous knowledge of his own power—will manifestly require different and more radical measures than are needed to check the colt in his first disposition to go wrong.

YOUR WILL AGAINST THE HORSE'S WILL

As the horse, in the practise of any vice, shows a rank disregard of his driver, the first step in its cure is to impress him, in a general way, with your supremacy and his own inability to resist you successfully. This you can never do by means of the whip or club. Whipping a horse punishes him, it is true, but it is powerless to compel him to do what you want and it also rouses his resentment in a way that makes his training all the more difficult. Remember that the first thing you are striving for is his complete subjec-

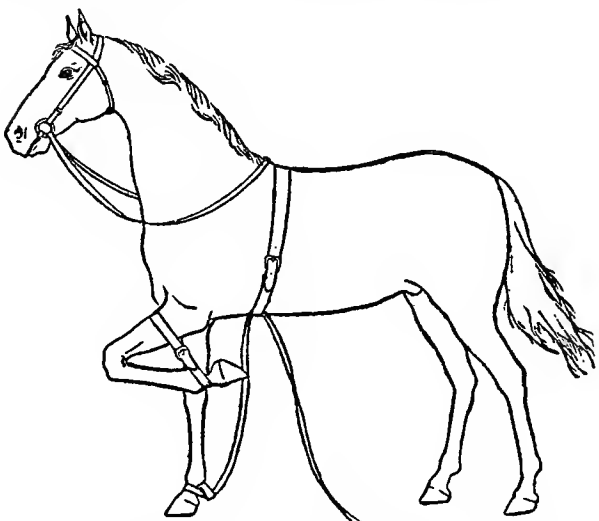
tion, that nothing can be done till this is accomplished, and that it must be accomplished, not by punishment, *but by a display of power.* Furthermore, to succeed you must be very patient as well as persevering, always remembering that you are dealing with an intelligence inferior to your own and exemplifying the grand old Arab proverb "Fear and anger a good horseman never shows."

In the treatment for kicking, the disposition to kick should, as far as possible, be taken out of the horse before he is harnessed. It is best to begin by laying him down a few times. A horse lying prone upon the ground is robbed of all his natural means of defense, and the knowledge that you can, at your pleasure, place him in this humble and defenseless position has a very chastening effect on his mind.

Having first selected a smooth piece of greensward where he will not hurt himself, put on him a bridle and surcingle and strap up his near forefoot with a breeching-strap—the short loop around his foot, between hoof and fetlock, and the long one over the upper part of his leg. Fasten one end of a long strap to the off forefoot below the fetlock, pass the other end up through the surcingle and take it in your right hand, the bridle-rein being in your left. Push the horse

sidewise and the moment he steps, pull sharply on the strap. This will bring him to his knees.

If he is a horse of any spirit, he will generally make a valiant fight against this treatment, often springing high and plunging desperately, but, having the use of only his two hind legs, he soon



ATTACHING THE STRAPS FOR THROWING A HORSE

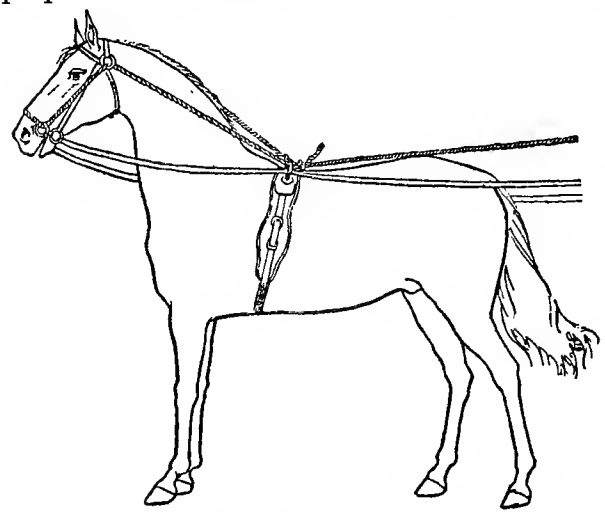
becomes wearied and rests with his knees on the ground. Now pull his head toward you and he will fall over the other way. By simply holding down his head, you can keep him on the ground as long as you please.

Simple as all this sounds, the trainer needs his wits about him and must be alert of foot and eye, as well as hand. Sometimes, with a really bad horse, it takes some little time even to get the straps adjusted and the foot fastened up, and if the horse is large and strong, the trainer should have an assistant, the latter holding the horse's head by a long rein attached to the bridle, while the trainer handles only the foot-strap.

When the horse has lain on the ground for a few minutes—long enough, say, for his brains to settle a bit—release the straps and let him get up. Then repeat the operation and keep on till he ceases to make much resistance and shows, by his altered demeanor, that he has lost confidence in himself. He is now ready to harness. In this proceed as follows:

Have ready a strap one and one-half inches wide and eight inches long, with a ring sewed strongly into each end. Attach this firmly to the top of the bridle, so that the ring hangs just over the rosettes. Have an extra bit (a straight one, not joined) in your horse's mouth. Now take a strong cotton cord about as large as the little finger and, having one end in the breaking-cart, carry the other end forward through the off terret, up through the off ring on your short strap, down through the off ring of the extra bit,

over the horse's nose, through the near ring of the extra bit, up through the near ring on the short strap, back through the near terret and there tie to the long end, so as to form a check-rein. Adjust this so as to keep the head at the proper elevation, rather low than high, but not



How the Controller Is Rigged

too low. Tie a string from the top of the bridle down between the eyes to the cord where it goes over the nose, so that it will not slip down.

Now, whenever the horse attempts to kick, pull sharply on the line and his nose will be twitched up in the air, rendering kicking impossible, for

he cannot kick when his nose is sufficiently elevated. It also has a fine moral effect on him that is very consoling to those who have seen him kick a buggy or two to pieces. The arrangement should be used till the horse shows no disposition whatever to kick and in this it is best to err on the side of safety, giving him time for the most thorough repentance. The cord is not at all in the driver's way and it does not hurt or irritate the horse in the least as long as he behaves. When it is finally left off, have a check-rein made on exactly the same principle and adjust it so as to keep his head at the same height.

The device here described—which, for want of a better name, I call the "controller"—I first used some twenty years ago on an exceptionally bad runaway kicker, after having used several other contrivances which did not have quite the desired effect. I have since found it one of the very best means of control and correction, and I have used it with excellent results in the cure of other vices as well as kicking.

THE KICKING HABIT IS CURABLE

Kicking is very properly classed as one of the very worst of vices and yet I have not known a case that could not be cured. All that is neces-

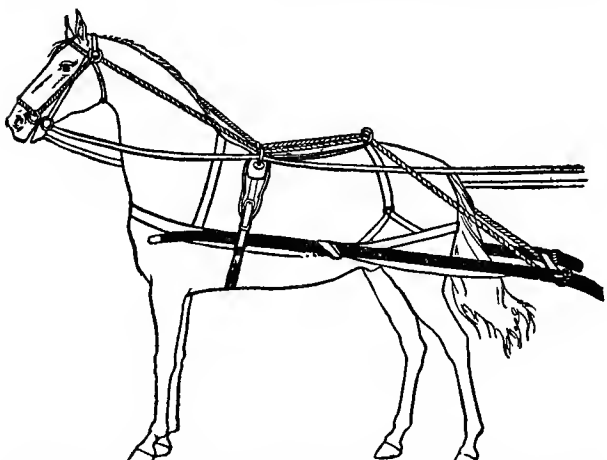
sary is to apply the right treatment and to apply it intelligently and perseveringly. Some cases require much longer treatment than others, however, and it is impossible to state how long it will take to cure any particular case. One filly, for instance, that came to me with an evil record took over three months of patient training before her disposition to kick was wholly eliminated. On the other hand, I once bought a four-year-old colt that had become a kicker when being broken and was considered so bad that his breaker gave up the job, yet a fortnight's treatment was all that was needed to render him perfectly safe and gentle.

Many times—indeed generally—the tendency to kick is, in a large measure, cured at the very beginning of treatment. But the horse must still be used with his rigging on and watched carefully for a recurrence of the vice, and he cannot be considered cured till a convincingly long period of good conduct, without even a hint of his vice, indicates that his reformation is permanent.

Another device, which, if preferred, may be used for a while before using the controller may be prepared as follows:

Proceed exactly as in arranging the controller, but, instead of tying the short end of the cord to the other behind the terrets, adjust it so that both ends are of equal length. Have a ring fas-

tened to the back-strap of the harness at the point where the hip-straps, that support the breeching, cross it. Now run the two ends of the cord back through this ring and tie them, one on each side, to the crossbar of the shafts, being careful to adjust them so as to keep the horse's head quite



WHEN THE CONTROLLER IS RIGGED THIS WAY IT WILL ACT AUTOMATICALLY

a little higher than is necessary with the controller, but not high enough to keep him unduly irritated. It will be seen that with this rigging whenever he attempts to kick he will punish himself promptly and severely.

I have not myself used this device very much,

usually preferring to use the controller from the first. But it is an excellent thing for the kicker's first few lessons in harness and is rather easier for the trainer, as it is self-acting. But when the horse has yielded to treatment, so that there is comparatively little danger of his making much further fight, the controller is better, as it is less harsh when not in operation and allows more freedom for the head.

RUNNING AWAY

For running away, unless accompanied by some other vice, simply put on the controller and bring the horse to a standstill whenever he attempts to run. The discovery that you have it in your power to stop him will have a very salutary effect upon him and it will not be long before his attempts to run will be much less frequent. The controller should be kept on him till he has gone long enough without showing any disposition to run to indicate that the habit is cured. This may take some time, but the treatment, to be effective, must be thorough and, as already pointed out, the device does no harm and is not in the driver's way. When you finally do discontinue it, use a four-ring bit with over-draw check-rein and continue to use it as long as you have the

horse. He may never run again, but safety should be your motto and there is no bit so good for holding a horse. It has also the great advantage of being an easy bit for the horse as long as he does not pull upon it—and this is a noteworthy feature, as you can never cure a vice or a bad habit if your means of correction are operative at other times than when the vice is exhibited.

I have purchased and used quite a number of runaway horses and have never had much trouble with them. Sometimes the inclination to run would show itself a little at intervals and, more frequently, it seemed to become wholly eliminated. But in the use of horses on the road there is often more to rearouse this vice than some others and I would repeat my recommendation that the use of the four-ring bit and over-draw check-rein be never discontinued on a runaway.

BALKING

Balking is not a dangerous vice, but of all equine short-comings, it is perhaps the most intensely aggravating. And yet the old proverb that "there is always good stuff in a balky horse" has some truth in it. Horses of superabundant nervous energy are the kind that are by far the most

likely to contract this vice. Dull, sluggish horses are not so subject to it.

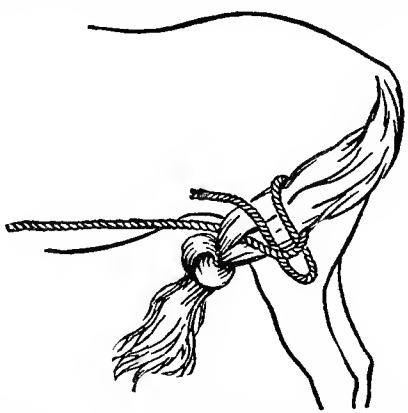
Balky horses, though all exhibiting the same vice, are of such different kinds—each one, apparently, having a different kink in his head—that it is impossible to tell, in the first place, which one of several kinds of treatment will work best. But there are so many cases in which palliative treatment is all that is needed that this should always be given a fair trial before coercive measures are used. Use the horse horse-fashion and take his good conduct for granted and very often he will forget to balk. When he does, try to fool him by saying, "Whoa"; get out and adjust the harness or pick up his feet, one after another, as if looking for a lodged stone, and finally hammer on one of them with a stone, keeping it in your hand long enough to take his attention thoroughly and perhaps weary his other leg a little. Then get into the buggy as if everything were all right and start him up in the usual way.

All this may work and it may not, but it is the first thing to try. I have had a great many balky horses and in quite a number of instances have applied no further remedy and have used them for years with no repetition of the vice. If palliative treatment is found insufficient, put on the controller and elevate the horse's nose whenever

he stops. Hold it up strongly for a few seconds, then release the pressure and he will generally start.

Should it be necessary to treat the horse still further, proceed as follows:

Take the horse out of the shafts, strip off all of his harness, and put on an ordinary halter. Tie the hair of his tail into a hard knot. Now



THE BEST HITCH FOR TYING A HORSE'S HEAD TO HIS TAIL

run the halter-rope through the hair above the knot, pulling his head well round toward his tail, and fasten by a half-turn and loop which can be undone by a single jerk. Now stand back from the horse, touch him behind with your whip, and he will begin to turn around in a circle. He will presently get very dizzy and, if not interfered

with, will fall down. It is better not to go to this extreme, however, as in falling, he may injure himself; watch him sharply and the moment he is thoroughly dizzy untie the rope. Now harness him as quickly as possible, put him in the shafts—and drive on. I have not often found it necessary to whirl the horse in this way more than once to make him start, but in some rare instances it has to be repeated; in such cases make him turn the other way.

One point in respect to the whirling treatment can hardly be over-emphasized—it is essential to use a hitch that can be released instantly when the horse shows signs of tottering. If a knot is used that makes quick release impossible, the horse runs a chance of falling and straining himself badly. The hitch shown in the diagram is the simplest and safest I have ever used.

This whirling treatment is one of the very best means of breaking up a horse's confidence in himself and it can often be used to advantage in the treatment for kicking or other vices. The secret of it—just as in laying a horse down—is that it impresses him powerfully with your supremacy. It shows him that you can handle him very roughly if you choose and that you can do so with apparent ease. After that recognition of your supremacy he has little inclination to defy you and, if al-

ways handled quietly and with no display of temper or irritability, will soon come to yield the cheerful and unquestioning obedience that is so essential.

There are very few horses that will not amply repay the time and trouble necessary to cure them of their vices; in many cases it is making a useful and valuable animal of one that was formerly worthless. But the wise horseman will always bear it in mind that prevention is better than cure, for, although accidents will sometimes happen even with the best of management, the great majority of horses that have vices would never have contracted them if handled rightly from the first.

Many bad habits are formed when the horse is newly broken and beginning to work. It is then that he is getting his ideas of what he can and cannot do, and double vigilance is necessary to see that he does not make experiments in independence that will lead to vice.

Too often, the young horse is trusted too much, he is left standing, tied with a weak hitch-rope or perhaps without hitching at all, used by inexperienced drivers or be driven in a ram-shackle wagon, with an old harness tied together with strings. Vice can almost always be traced to bad management of some kind. It is a good while before a young horse is fit to be used and trusted like an

old one, and if this fact could be constantly borne in mind by those who use him, the proportion of accidents that happen and vices that are formed would be much less.

CHAPTER V

SHYING

SHYING is a very common as well as an extremely objectionable vice, completely spoiling many otherwise valuable horses—for there is neither pleasure nor safety in driving a bad shyer. It is first caused by genuine fear. In the majority of instances—in fact, always, except in the case of nervous or hysterical shyers—had the horse, from the first, been gradually accustomed to the objects he fears and shown that they would not hurt him, he would never have become a shyer.

The average colt, when being broken to harness, is constantly meeting some object that—in greater or less degree, according to his nature—excites his fear. Perhaps it is only a stump or a rock or a log by the roadside half concealed by the grass. A good horseman, in such a case, will be very patient, allowing the colt to stand still for a moment and look at the object of his fear, then moving him gradually a little nearer and convincing him that his fear is unfounded.

Every such experience renders the colt less nervous and timid, for it increases his confidence in his driver.

But, too often, the essential factors in the case are overlooked. The driver, knowing that the colt does not fear such objects in the pasture, foolishly assumes that he, therefore, ought not to fear them in the road—forgetting the entire novelty of the position and that, in the strangeness of his new experiences, the colt's excited imagination readily transforms the log or stump into some great beast, ready to spring upon him. So the colt, instead of being shown his error in a rational way, is presently engaged in a foolish tussle with his driver, and it is ten to one that, before it is over, the colt, in some measure, has got the best of it. This needless tussle and his partial victory he will afterward associate with the object of his fear, and he will not only feign terror of it when he has really got over his fear, but will be more likely to find fresh objects to shy at.

To cure the shyer when his fear is genuine, there is no way but to do what should have been done in the first place; begin all over again, be both patient and resolute, and properly accustom him to all objects that he fears. When it is certain that he is only feigning terror, coercive measures must be used, for it is absolutely necessary

that, in some way or other, the horse be got by the object. He will never be good for anything if allowed to turn around and retrace his steps. In many cases I have found a good whalebone whip and a four-ring bit all the adjuncts that were necessary. But generally speaking, the controller, described in the last chapter, affords the best means of treatment, for the horse is obliged to stand perfectly still when its pressure is applied, and when it is released he is frequently ready to pass quietly by. With reference to the whip, its use is so often abused that it is never to be recommended except to those who know exactly when and how to use it.

The fact that the fear is sometimes real and sometimes assumed makes it especially difficult to give detailed instructions to fit any and every case. It is essential that the trainer know the one from the other and I find it almost impossible to describe the actions of the horse in each instance so that my reader can distinguish the difference. And yet there is a difference, and a difference that anyone who has had much experience with horses can readily perceive. In the assumed fright, the horse is acting a part and his actions do not ring true.

It often happens that a horse fresh from the stable will shy at an object that he would scarcely

notice when tired. This does not always prove that he is shamming—nor is it to be confounded with neurotic or hysterical shying, of which I will speak later. When fresh, his nerves are keyed up to such high tension—are all on such a tiptoe of expectancy, as it were—that the impression is telegraphed to the brain with lightning rapidity and an involuntary shrinking is the result. Later, when he is tired, the nervous action is slower.

Although, as a general rule, it is preferable to drive a horse by an object that he fears rather than to lead him, there are a great many cases where the latter is necessary and it is highly important to know how to do it. Strangely enough, this thing, which seems so simple, is almost invariably done in the wrong way. Under the impression that the horse needs coaxing and persuading, the ordinary driver will stand facing him and grasping the two reins close to the bit, walk sideways, constantly speaking words of encouragement as he endeavors to "work" the animal by the object. No wonder the horse believes the occasion a momentous one. From his driver's behavior he is led to believe he must nerve himself to pass some terrible object.

Now the right way is this: Grasp the near rein in your right hand about a foot from the bit. Now, holding it firmly, but looking right before

you and paying no apparent attention to the horse, walk on in a nonchalant way—just as if the circumstances were nothing out of the ordinary and you assume, as a matter of course, that your horse will follow quietly. If your previous attitude toward him has been such as to win his confidence, he will do so, for he is taking close note of your behavior and is satisfied by it that he has nothing to fear.

NEUROTIC SHYING

It happens not infrequently that people owning highly-bred horses are puzzled and annoyed by a vice—usually shying or bolting—which is manifested only occasionally. A horse, for instance, is thoroughly accustomed to automobiles and you have driven him on perhaps twenty occasions when he has shown no fear of them. But on the twenty-first he evinces the most extreme terror, shying badly or perhaps even bolting over the roadside wall. That the fear is genuine is evident to an experienced horseman and the vice is tenfold worse in that we never know when to expect it.

This vice (for which the horse is not to blame) is really an hysterical outbreak, and though the shyer of this class may be held in check at the time by some such device as the controller, we

must, in order to effect a real cure, go beyond any mere coercive treatment and look for the cause of the trouble where it really is—in the nervous system. The way in which this nervous disorder operates may be illustrated by a phase in human nature familiar to all.

A boy is afraid of the dark, although he knows his fear is foolish and that there is nothing to hurt him. He goes into a dark cellar twenty or thirty times, always holding his unreasoning fear in check by an effort of his will. But there comes a time when, his nervous mechanism not being in as good order as usual, his fear gets the best of him and he makes a mad rush for the door. He knows there is nothing in pursuit, but he has lost his self-control and is in as abject fear as though menaced by a real danger.

The case of the neurotic shyer is of like kind. The horse has learned that the object he once feared will not hurt him, but the association of ideas is such that a slight effort of his will is necessary, each time he passes it, to hold his fear in check. But some day, when his nerves are a trifle out of order, even this slight effort becomes impossible.

I have owned and also treated for others a number of neurotic shyers and bolters, and they were all horses that had a large percentage of warm

blood. The trouble is not one that cold-blooded horses are liable to.

This vice is of so peculiar a nature and so many horses are never cured of it—at least during the best years of their lives—that its cure might seem, at first blush, a difficult matter. But, once understood, there is no trouble in effecting a cure and the treatment is extremely simple, consisting only in judicious feeding accompanied by work—work, the natural and God-appointed medicine that has reformed more vices and taken the nonsense out of more horses and men and women than any other agency since the world began. I do not mean excessive or unduly hard labor, such as breaks the spirit of a horse, nor occasional severe journeys, followed by a period of rest, but daily, unremitting work in harness or saddle or even light farm work, such as plowing old ground, if the horse is large and strong enough.

That the reasonableness of this treatment may be fully understood, let us look, for a moment, at the nervous system of the highly-bred horse and the purpose it serves. This nervous system—far more highly developed than in the cart-horse—is what gives him his reserve force, his staying power. It is not bone and sinew that keeps him going at the end of a hard race, but nervous energy. The common horse gets tired and quits;

the thoroughbred also gets tired, but he keeps on.

This wonderful piece of mechanism gets out of order in a horse dawdling in stable or paddock. But give the horse plenty to do and his nervous machinery again becomes healthy and runs smoothly.

The feeding in neurotic cases has also a direct bearing upon the end in view. The chemical element that nourishes the nervous system is phosphorus. Therefore, when the nervous system is performing its proper work, there is little danger of giving the horse a food too rich in this element; but when the nervous system has no chance to spend its energy, the excess of nerve-food becomes hurtful, rather than beneficial. The horse-foods which contain the largest percentage of phosphorus are oats and barley, and that is why these grains put so much life into a horse. Next in order comes Southern corn. Northern corn contains little phosphorus, but a large amount of carbon, and hence it is a sleepy food, making a horse fat and lazy.

The knowledge of these facts should be turned to practical account in feeding. In the earlier stages of treatment the neurotic horse should be deprived of a portion of his oats, substituting a proper ration of Northern corn. Usually a slight change in this respect is enough to produce

the desired result, and in a short time, as treatment progresses, his full ration of oats should be restored. For he will need an abundance of life-giving food if given the constant work that his case requires, and it must be remembered that it is upon work that we depend chiefly for a cure. The dieting simply slows up the nerve-machine a little and relieves the strain till the more important treatment begins to have its effect.

PULLING BACK ON THE HALTER

Pulling back on halter is a very provoking vice. It always originates in the horse breaking (usually by accident) a weak halter-rope, after which he will try every new halter and every new place where he is tied. Not only that, but a confirmed halter-puller, after being tied with a halter that he cannot break and standing quietly for weeks in the same place, will suddenly and with no apparent reason make a fresh attempt to break away.

The first thing to do, of course, is to have a strong halter, and the rope should be of extra length. If the horse is then tied very high, he will soon give up the habit. I have frequently tied such horses to a ring attached to the ceiling—though this extreme height is not really neces-

sary; a foot or two above the horse's head is all that is needed. The ring should be well forward of the head of the stall and the rope just long enough to permit the horse to lie down. If placed immediately over his head, it will allow him to back too far out of his stall, where he may kick his neighbors or otherwise get into mischief.

Another good way is to have a long rope on the halter and have the hitching-ring exactly in the middle of the front of the stall, pretty high up. Carry the end of the rope through the ring back between the horse's fore legs and tie it rather tightly around his body, having the knot exactly underneath. He will not pull back many times with this arrangement. But while an excellent lesson to the horse is thus administered, the method is not very convenient for regular use and the single strong halter-rope, tied high, as recommended above, is more satisfactory as a steady thing.

KICKING IN THE STALL

If the horse is vicious and kicks at any one who attempts to enter his stall, he must be subdued and the disposition to kick taken out of him by the methods recommended for kickers in harness. But if, as is more often the case, he has simply formed

the habit of kicking at the side of his stall different measures must be used.

The simplest method and one which, in the majority of cases, is as good as any is to fasten a plank or timber securely across the stall about an inch above the horse's hips. With this arrangement he cannot kick, as, the moment he attempts to throw up his hind parts, he is checked and disconcerted by the plank.

TAIL SWITCHING

This habit is always unpleasant and sometimes very dangerous, as some horses will throw their tails clear over the reins and then kick or run or both. The best plan is to tie down the horse's tail whenever he is driven and keep this up for several months, if necessary, until he forgets the habit. Make a few strands of hair on the inside of his tail into a braid about the size of a clothes-line and finish it in such a way that it will not come undone. Pass a shoe-string through this braid and tie it firmly to the breeching. This arrangement will effectually stop the switching and is so inconspicuous that the majority of people will not notice it. This scheme is applicable in all cases where tail-switching is strongly established.

Make it a point also to be very quiet and gentle with the animals that have this habit, both in the stable and when using them. Be deliberate in your movements and do not speak to the horse loudly or harshly. Tail switching indicates a nervous irritability, and the less that is done to rouse this, the quicker will be the cure. A few years ago I bought a young mare who had the habit and in a few months she got entirely over it with no treatment whatever, except using her gently and "horse fashion."

The methods I have here recommended for the cure of different vices are those which I have found the best and most efficacious; they are simple and can be applied by any one else as well as myself. If carefully studied they will, I think, furnish the key to the treatment for the cure of any that are not mentioned here. But however carefully I may explain their working and the principle on which they depend, much after all must depend on the trainer and I feel that I cannot urge too strongly or too frequently upon my reader the necessity for patience, resolution, and self-control.

CHAPTER VI

STABLING AND FEEDING

COMPARATIVELY few of those who own horses build their stables new from the start, with all the features that may be most desirable for the purpose; the majority are constrained to keep their horses in such buildings as they may chance to have. In the matter of stabling, therefore, I shall mention only the points of most importance.

For its chief requisites the stable should be light, warm, and dry, with means for extra ventilation when needed. All these features can be had in any ordinary barn and do not necessitate much expense; costly stable appointments do not add to the comfort of the horse and are always a secondary consideration. It is exceedingly desirable to have box stalls if space will permit. Indeed, so highly do I value them that in many instances I have had them built at the expense of space that was needed for other things. Of course, horses can be kept successfully in standing stalls, but box stalls are to be preferred when they can be had.

The box stall should be ten feet square and may be built with or without a floor, as is most convenient. In either case, its bottom should be filled to the depth of from four to six inches with fine gravel or coarse sand, which should be replenished from time to time, and above this a layer of straw or other litter should be spread at night. A certain amount of the sand will be taken up every time the stall is cleaned; this should be replaced with fresh sand. In this way the sand never becomes foul and it forms the best of all bottoms for box stalls. It is pleasant for the horse to stand on and keeps his feet in fine, healthy condition. This feature alone makes the box stall worth while, even if it had no other advantages.

The standing stall, on the other hand, should always have a floor. I know that some very good authorities recommend an earth floor, rather than a wooden one, as being easier to stand on and furnishing needed moisture for the feet, and theoretically this is all right. But in actual practice the horse invariably wears out and paws away a hollow place where his fore feet stand and his hind feet are almost certain to be much of the time in a quagmire of dung.

A wealthy amateur who had just purchased a farm and had asked me some advice about his

stables took exception to my recommendation that the standing stalls have floors. "Floors are wrong in principle," he said, "and so must be wrong in practice"; and he had his stalls built without them. In less than a month from the time they were first used they were in such condition that he was obliged to have floors put in. The same thing has doubtless happened in many other instances and simply goes to show that a thing may be absolutely right in theory and yet not work out well in practice.

I have used both standing and box stalls all my life, and on most farms it will be generally most convenient to have both. The special desirability of the box stall is for growing colts and for horses that are not used regularly. For horses that are used every day the standing stall is more convenient and serves every purpose.

In feeding, no hard and fast rules can be laid down; both kind and quantity must be according to circumstances and the judgment of the feeder. A great many horses are injured by being fed too generously when idle, or comparatively so, just as a great many are hurt by being worked or driven hard on light rations. Moreover, certain grains are more available than others in almost every locality and this, too, must be considered in feeding. Upon my own land, for instance, oats

are an uncertain crop, while barley does well and I have found the latter, fed in proper quantities, an excellent substitute for oats—though nothing, in my opinion, is quite as good as oats for hard work, whether fast or slow. On the other hand oats, splendid feed as they are, are not as good as corn and bran for horses that are little used. In fact, conditions must always be considered in feeding. It may be of help to the reader, however, to know the feeds that I have found the best under these conditions which more ordinarily obtain.

(1) If a horse is doing excessively hard work, whether fast or slow, feed a heavy ration of oats and no other grain. There is little danger of feeding too much. If he can rest on Sunday, give him, on Saturday evening, a bran-mash instead of his oats.

(2) If a horse is standing idle a great deal of the time, feed him little or no oats or whole corn, but feed bran, with a little corn-meal mixed with it—one part of corn-meal to two or three parts of bran, according to conditions.

(3) For old horses, especially if out of condition, feed a mixture of one quart each of corn-meal, bran, and molasses. This ration may be fed at night and at morning and if the horse is working, feed oats at noon. It is best to begin with a

smaller quantity of molasses—say, a pint—and work up gradually to a quart.

There is nothing equal to molasses for getting a run-down horse in condition and for this purpose it may often be fed to young horses as well as old.

(4) For horses used under all ordinary conditions feed corn in the morning, oats at noon, and oats at night. Two quarts of shelled corn are enough, and the oat ration may range from two quarts to four quarts at a feed, according to the amount of work the horse is doing.

For forage, good, sweet hay must be the main dependence. As a general thing, too much hay is fed to road-horses, especially in the country. From ten to eighteen pounds, according to the horse and the grain he is getting, is enough; perhaps twelve pounds would more often prove the right quantity than any other. But it must be remembered that will be sufficient only when he is receiving a good grain ration; when only a little grain is fed, the hay ration must be much greater. If hay is only sweet and nicely cured, I have never been able to discover that its coarseness or fineness made the slightest difference. Hay that is mowed rather late—say, just as it is going out of bloom —is better for horses than that which is mowed earlier.

Good, bright corn-fodder, run through a cut-

ting machine, also makes a fine forage feed for horses, equal, under right conditions, to the best hay and often better relished. Fodder containing smut, however, should never be fed to horses. In parts of the Southern States the leaves are stripped from the stalk and cured by themselves. As this fodder contains no ears it is, of course, always entirely free from smut and, as a forage feed for horses, it has no superior.

Do not forget that water is as important for horses as feed and that, however well you may feed, your horses will not do well if they do not have what water they want and have it regularly. They should be watered three times a day. Salt is also an important thing, though, if a horse has it always by him, he will consume only a little. A lump of rock salt should be kept always in the manger.

CHAPTER VII

THE COLT'S KINDERGARTEN TRAINING

OUR care in the development of the colt should begin before he is foaled. His dam should be generously fed, have a comfortable stable (a box stall whenever practicable), and plenty of exercise. The work to which she is put, whether on the farm or the road, should be as regular as possible. It should not be unduly severe, however, nor too long continued at a time. If she has to pull a load, care should be taken to have her harnessed properly, so that the traces, pole, or shafts do not press too much against her sides. But any inconvenience that this may involve should not prevent her being used; exercise is essential and, if properly safeguarded, will cause no bad results. Often my own mares have been used almost to the very day of foaling.

But, after foaling, the best thing for both mare and foal is to cease work and turn them out in some good pasture where there is water. The mare will give more milk and the foal will do better in this way than any other—so much better, in

fact, that nothing but necessity should ever prevent its being done. If it is really necessary to use the mare, a roomy box stall should be provided where the colt may remain during his dam's absence. This box stall should not be a ramshackle affair that the colt will try to get out of or in which he can get tangled up in any way. It should be strong and the sides both smooth and high. If two colts are being raised at the same time, both can be confined in the same stall. They will be quieter and better contented—and therefore will do better—than one alone.

If the mare is worked, she should be generously fed—and even if she is not, it often pays to give her some grain. If she is not bred again and is running in pasture, she may do very well and give plenty of milk on grass alone, provided, of course, that the grass is abundant and of good quality. But if, as is commonly done, she is immediately bred again, the feeding is of increased importance and should never be neglected when it seems to be needed, for she is performing the double duty of feeding the foal at her side and the foal she is carrying.

It is an excellent plan to give the mare her oats in such a way that the colt can get his nose into the manger. In this way he will soon learn to eat with her. The foolish business of "teaching him

to eat" will be done away with and he will be in better shape for weaning when the time comes for it.

In this latter operation I need hardly say that separating the mare and colt by the length of a stable or the area of a barn-yard where, though out of each other's sight, they can still hear and recognize each other's voices is, of all ways, the worst. It is an unhorsemanlike performance and subjects both mare and colt to a great deal of needless uneasiness and worry. The way commonly followed by good horsemen is to place them at once so far apart that they can not, by any possibility, hear each other's cries. On a great many farms, however, either from lack of suitable buildings or some other reason, this is not practicable.

A method that I have found very satisfactory in a great many cases is to use the mare frequently during the last week or so that the colt is with her, leaving him at home, so as to gradually accustom them both to separation. Then I wean by putting the colt in a box stall immediately adjoining the mare's, where he can see her and even touch noses with her through the bars. In this way, though prevented from sucking, he still has her companionship; neither of them is exactly suited with the situation, but they find it at least

tolerable and they very soon become accustomed to it and entirely contented. With the drying up of the mare's milk and her continued use in harness, which keeps her much away from the colt, she soon loses her interest in him and he can then be removed to some distant pasture with very little protest on his part or hers.

The care and common sense that should be observed in weaning should be continued afterward; at the risk of being accused of repetition, I may say here that in raising horses, far more than in any other stock, constant care and watchfulness are necessary. Colts should not run in pasture with older stock, but be turned into a field by themselves. Where only one colt is being raised, this is not always practicable; but he can, at least, be turned out with only one or two horses, with which he is well acquainted, and thus the danger of his getting hurt will be greatly lessened. As a rule, horses are not very inimical to a young colt, even when he is new to them; more often they are friendly and disposed to play with the youngster. But horse play is proverbially rough play and, with companions so much older and stronger than himself, he is exceedingly liable to get hurt.

In wintering the colt it is not wise to feed very much corn; oats and bran are the right grains to use. A little corn-meal mixed with the bran, how-

ever, helps to keep the colt in order and does no harm. From weaning-time and during the first winter I have had the best success in feeding oats, and the two winters following, oats in the morning and a supper of bran, with a little corn-meal added. It is hard to give any fixed rule as to quantity, as much depends upon the quality of the hay (of which the colt should have all he wants) and also what object the breeder has in view. If his aim is to sell the colt at an early age—say as a yearling or two-year-old—a very liberal grain ration will, of course, make the colt larger and smoother at that age. But inordinate feeding, even if of so good a grain as oats, is not natural and under ordinary circumstances is unwise.

It seems almost needless to add that the colt should be wintered in a box stall and also allowed to run out for exercise every day when conditions are suitable. As a necessary part of his training he should be taught to stand quietly in a standing stall and for this purpose he should be tied at first and for a long while thereafter with a rope that he cannot break; but the box stall should be his regular quarters.

The operation of castration is best performed when the colt is about one year old. I have frequently been asked what is the best method. I am rather reluctant to reply to this query be-

cause in different parts of the country different methods are in vogue, and—assuming, of course, that the method is one of the approved ones that are practised by reputable veterinary surgeons—it is usually better to follow the custom of the locality. This much, however, can be said that the operation should always be performed by a skilled veterinary surgeon or by some one who has had sufficient experience to work skilfully and to know exactly what he is about. I am not saying that there is not a choice in the different methods, for I think there is. But the operator is more likely to succeed in doing a thing as he has always done it and seen it done than in some way that is new to him.

Following castration the colt should be kept in a roomy box stall at night and turned out in a good pasture every day—for grass is the very best medicine for him during his recovery. He should not be out in the rain, however, nor in chilly weather, and every morning and night he should have a feed of oats and bran. This care and attention should continue till the inflammation of the parts has subsided and the wound entirely healed.

The details of breaking the colt to harness will be given in another chapter. When he is old enough to put to some use—say three or four

years old, though his strength should not be taxed very severely until he is five—he should be accustomed to his work gradually, and, as he is still in the formative stage, the tasks to which he is set should be chosen with regard to the good they will do him rather than his owner. In this connection one of the best things in the world for a colt is light work on a farm. It tends, more than anything else does, to make him gentle, for the colt that is accustomed to the swinging and rattling of the plow whiffletrees around his heels is not so likely to be ticklish around his hind parts if anything happens when in carriage.

A year or two ago, as I was driving down a long hill with a pair of four-year-old colts, the carriage pole, which was new and had an unsuspected flaw in it, snapped in two in the middle and the carriage ran into their heels. Though, naturally, they were a little alarmed, they made no fuss about it, but stood quietly while I checked the wheels and got them clear of the wreckage. These colts had been used in plowing old ground and also in harrowing, though I gave them very little of the latter on account of its greater severity. There is a notion, sufficiently prevalent, that carriage or trotting stock ought not to be set to these humble tasks, but should have all their training and exercise on the road. I have never hesi-

tated to put my most finely-bred carriage colts to farm work, indeed have sometimes gone to considerable inconvenience to do so.

Of course, judgment must be used. I have rarely kept a colt (unless of draft stock) at the plow more than two or three hours and at the harrow a still shorter time. The main thing, as already stated, is not the work we get out of him, but the steadying and civilizing effect that it has upon him.

CHAPTER VIII

THE EDUCATION OF THE COLT

IT is as true of our colts as it is of our boys and girls that in their development and education a great many mistakes are made. They are misunderstood; driven when they ought to be led and led when they ought to be driven; often cruelly punished when not to blame, or allowed to defy us with impunity when wholesome correction is needed. But there is less excuse for these errors of judgment when dealing with colts, for, although we might, perhaps, be supposed to understand human nature, intuitively, we most assuredly do not; and, as equine nature is less complicated than human, it is easier to learn to understand it.

In a previous chapter I have pointed out some of the limitations of horse nature, the horse's way of reasoning almost wholly from experience, and how all really scientific training is based upon taking advantage of these limitations. In the case of the unbroken colt, two other things should always be remembered: First, that horses are, by

nature, timid animals and, second, that in a natural state they are gregarious in their habits. When, therefore, we put a lot of straps and buckles on a colt, of the use of which he has no comprehension, and essay to drive him, alone and separate from his kind, among trolley-cars, automobiles, and other objects that would naturally terrify him, it will be seen that we are straining his nature a long way from its starting-point and that we should make due allowance for the fact.

The best time to break the colt to harness is when he is from one to two years old. Of course, if broken at this tender age, he is not—especially if a road-horse—fit to be put to much work when his education is completed, and care must also be taken not to injure him in the process; but he seems to learn more easily and is easier handled than when he is older and, once well broken, he can be again turned out to pasture with no danger of forgetting what he has learned.

EARLY BREAKING IS EASY BREAKING

To those who have had much experience in this line, the advantages of breaking young are so manifest as to require no argument. There are some, however, who admit it freely, but do not practise it through fear of hurting the colt.

There is no danger of this, if the matter is gone about as it should be. Of my own colts, for instance, I never had a single one injured by early breaking. On the other hand, it is almost always much harder to break a nearly-matured or fully matured horse, though, of course, this varies with different individuals, according to breed, temperament, and disposition.

A few years ago a fine five-year-old mare, a beautiful animal, trotting-bred, was brought to me to be broken. She had cost her owner considerable money and he told me he was so choice of her that he did not have her broken earlier for fear she might be injured in some way. She was handled carefully, but she was large and strong and her temper none of the best, and before the job was finished coercive measures had to be used. And if her owner could have seen the stiff fight that she put up when certain straps and rigging were put on her, I think he could hardly have supposed that she was in less danger of hurting herself than if handled when younger.

I might multiply examples, for I have handled quite a number of fully-matured horses that, for some reason, had never been broken. As I have already intimated, if the horse is naturally tractable and gentle, it makes less difference at what age he is broken. But it is pretty hard to tell

beforehand just how a colt will act when being broken, and it is a principle recognized by trainers of animals of all kinds that the training is best done when the animal is quite young.

Before taking up the details of breaking let me lay down two important rules:

First—Always have all your rigging so strong and well-adjusted that the colt cannot, by any possibility, get the advantage of you.

Second—Make your lessons short and of frequent repetition.

The philosophy of the first rule will be apparent, I think, to all who have read my observations on the horse's nature in previous chapters. For that of the second, with the colt, as with the child, the too-long lesson wearies him and benumbs his brain; it is the frequency of successfully administered lessons that makes the strongest impression on his mind. But remember that they must be successfully administered. If you have a difference of opinion with your colt, persevere until he yields to your will; then at once cease training and put him up in the stable with the impression of your supremacy and his submission fresh in his mind. Be very gentle with him now, make him as comfortable as you can, give him a little hay, and, as soon as he is cool enough, a little grain. Then, after a couple of hours, take him out and repeat

the lesson. He will yield much quicker this time; and if the rule is faithfully followed, it rarely requires more than three or four lessons to make his obedience both prompt and implicit.

Remember that, as a general thing, the colt does not fail to do your will from any inherent desire to oppose or defy you, but because he does not understand what you want. The whole thing is new and meaningless to him. The average colt will do cheerfully what you want him to, provided only that it is made clear to him what it is, and also that he has nothing to fear. But there is so much difference in colts, both in natural docility and in quickness of perception, that all cannot be handled alike, and if you have a colt that seems rather stubborn and slow to understand, your cue is to require but very little of him at a time—and stick to that little till you gain it. Then, at the next lesson, require a little more. Indeed, by following this rule—little by little, one thing at a time and oft-repeated lessons—you may often break a rather refractory colt in less time than you could a more promising pupil if cruder methods were to be used.

The first step in the education of the colt is bitting. In this matter some strange notions seem to have got afoot and some weird and curious machinery for carrying them out. I remember,

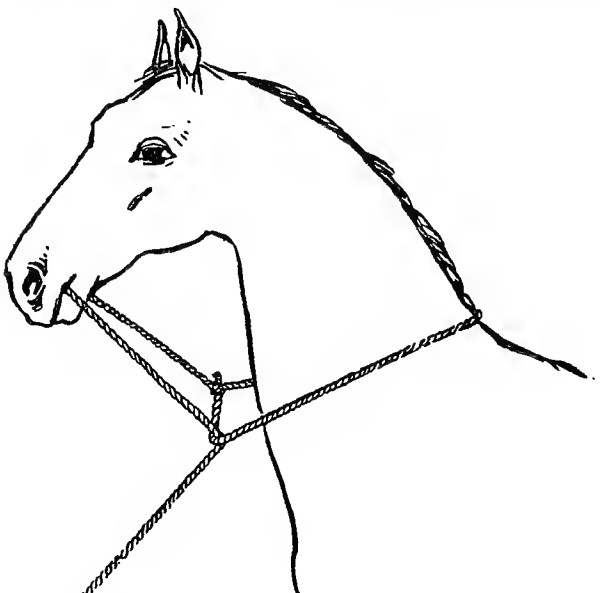
when a boy, seeing a colt wearing an imported "bitting gear" that held his head rigidly in a strained and uncomfortable position throw himself down in sheer pain and desperation, while his breaker—a bull-headed Englishman, imported, like the "bitting gear," and master of stables for the colt's millionaire owner—looked calmly on and observed, "'E's a bit stubborn, but 'e'll give hup bimeby."

It is such brutal performances as this that, in greater or less degree, have always disgraced the profession of horsemanship and, although there has undoubtedly been some improvement in such matters, the strange idea is still held by many otherwise sensible people that the most finely-formed and delicately-organized of all our domestic animals should be entrusted to the care of the ignorant, the coarse, and the stupid.

Now what is the process of bitting for? Simply to teach the horse to obey the rein and yield, in a proper degree, to the pressure upon the bit. To do this you need no "bitting gear," imported or otherwise, and need go to no expense beyond the purchase of a piece of cotton rope the size of your little finger for the first lessons, and for later ones a common jointed bit, rather thicker than usual at the ends.

For the first series of lessons proceed as fol-

lows: Take the cord (which, to serve all your purposes, should be about twenty feet long) and make a fixed loop in one end of the right size to go over the colt's head and fit, pretty snug, where



ARRANGEMENT FOR ACCUSTOMING THE COLT TO THE BIT AND MAKING HIS MOUTH FLEXIBLE

the collar is worn. Carry the end of the cord forward, on the off side, through the colt's mouth, and back through the loop on the near side. Now pull gently but firmly upon the cord and his

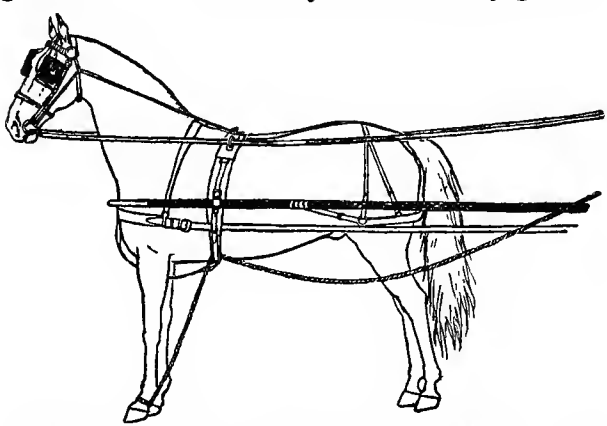
mouth will be drawn back toward his breast. Hold for a few seconds, then release and presently repeat. Continue these exercises, with an occasional respite for rest, for ten minutes or so. Then put him up in the stable and after an hour or two repeat the lesson. The object of this treatment is to teach him to give up to pressure on his mouth and also to render his neck flexible. The lessons should be repeated, at intervals, for several days, until he gets used to them. You are now ready to put on his bridle.

For this purpose all you need is an ordinary bridle without blinders. The bit, as already stated, should be thicker than usual at its ends, as such a bit is easier and much less likely to make the mouth sore. If it cannot be procured at the stores, a skilful blacksmith can make one; in such case, see to it that the work is nicely done and the bit finished perfectly smooth, for otherwise you will lose more than you gain. Tie one end of your line into the near side of the bit, hold the other end in your hand, and, with a long buggy whip, make the colt go around you in a circle. Shift to the other side from time to time, making him go around the other way. In a few days you can harness him and drive him about the yard, using your cord for reins.

To get a colt nicely bitted is an important part

of his education, and it should be carefully done. It should not be hurried too much, and if the colt's mouth begins to get sore, wash it frequently with dioxygen.

The colt's first lessons on the road should be in double harness beside some old and perfectly gentle horse. In this way he more easily gets ac-



THIS ARRANGEMENT OF THE FOOT-LINE IS SIMPLE AND EFFECTIVE

customed to the sight of the revolving wheels and the other novel features of the situation. After a half-dozen lessons of this kind he will be ready for the breaking cart. This should have long shafts and it is better, for at least the first few lessons, to have a foot-line on the colt. This need be nothing more nor less than the same cord

you have used in bitting him tied to one fore foot before the fetlock, passed over the girth, and back into the cart. With this, if the colt tries to kick or run away, you have the means of stopping him at once by pulling up his foot and placing him upon three legs; it has this additional advantage that, while it greatly disconcerts him and robs him of his self-confidence, it does not hurt him nor rouse his resentment.

I have known horse-breakers to object to it on the plea that it may throw the colt down, but I have used it many years and have never known this to occur or any other injury to result from its use. The controller (described in a previous chapter) affords an equally certain means of control and on some specially intractable colts it may be found useful. But in ordinary cases, where the foot-line is merely a safeguard and is not for the correction of any confirmed vice, it makes a little less rigging to put on the colt and is fully as satisfactory to use.

A great many colts are spoiled by the breaker being in too great a hurry to get them into a four-wheeled vehicle. The colt should be used a long time in the breaking-cart and got thoroughly handy before harnessing to a buggy; then there is little danger in it.

As a general rule, one is liable to be a little

too anxious to get the colt to work. Quite aside from chances of overstrain in the case of animals that are broken when immature, it is safer to let the colt acquire his working habits gradually.

It is hardly possible and perhaps needless for me to take up all the minor points in breaking; on one matter, however, I think I should say a few words, and that is in teaching the colt to back. I have often heard breakers say that "it takes a year to teach a colt to back properly"; whereas it can be taught readily in half an hour and I have often taught it in ten minutes. I may perhaps be excused for pointing out that there is some difference between ten minutes and a year. The best time to teach it is early in his training, before he has been harnessed to the cart.

TEACHING THE COLT TO BACK

Standing behind the colt, with the reins in your hands, pull back strongly but steadily upon them, saying "Back, back." Of course, the colt does not know what you mean, and he bears hard against the bit, often with his legs straddled out and resisting your backward pull as hard as he can. In a little while, however, to relieve himself from the painful pressure on his mouth, he takes a reluctant and half-unconscious step backward. This is

what you have been carefully watching for, and at the very instant that he shows this partial yielding to your will, release the pressure on his mouth. Now repeat it; he will respond a little quicker this time and you cannot be too careful to release the pressure the instant he complies. In this way, in a surprisingly short time, you will be able to back him any distance you please.

Now the great difference between this method and the methods (if so they can be called) that are generally practised is that, in this, you have shown the colt just what you wanted him to do; while in the lesson, as it is usually attempted to be taught, the colt can hardly suppose otherwise than that his trainer is trying to drag him backward by the reins—a thing that he naturally resents and that the trainer is manifestly unable to do. That in spite of such crude methods the majority of horses do learn to back is proof of their high intelligence, for they have learned what has not been taught them in any sane or rational way.

And this brings me to a matter of which I have often thought—the fact that despite the crudity and, too often, the barbarity of the methods employed in training, the great majority of our colts grow up into good, useful horses, just as the majority of our boys and girls, despite the many mistakes in their training, grow up into good,

useful men and women. It has been said that this is owing to the grace of God, rather than to any wise management on the part of man; and in a certain sense, this is doubtless true, for, by the term, we must understand the grace which underlies all physical and social evolution, causing the survival of that which is fittest and best and the ultimate domination of good over evil. But bad handling, nevertheless, causes a great deal of evil that would not otherwise exist; it is cruel as well as unscientific and responsible for nearly all the vices that are formed by horses. And when we reflect that the horse, our inferior in intelligence, is unable (except in a very limited way) to learn our language, it is clearly up to us to learn his and when we wish him to do any particular thing, to show him, in a way that he cannot fail to understand, what it is that we require of him.

CHAPTER IX

WHEN THE HORSE IS SICK

NEXT to the treatment for the different vices and equine shortcomings, one of the first things horse-owners usually want to know about is the treatment of horses when ailing. For, unfortunately, horses are more liable to sickness and accident than any of our domestic animals and often, in such cases, a skilled veterinary physician is too distant to be called in.

I wish to state, in taking up this subject, that I am not a veterinary physician and the few remedies that I shall point out are simply those that I have found useful in the treatment of those ailments that are of most frequent occurrence and which, as a rule, require immediate attention. A great many of my readers are doubtless unable, in many instances, to secure the services of a good veterinarian. With me, the inability to secure such services has existed practically all my life—or, at least, all of it that has been spent in the country, which includes by far the greater part. For, as a rule, it is only in our larger cities that

veterinarians, in the true sense of the word, are to be found. There are so-called veterinarians everywhere, but they are, for the most part, ignorant men, and of all human ills, the ignoramus who, by sheer bluff and imposition on the credulity of others, sets himself up as a veterinary practitioner is one of the worst.

Perhaps a little light on the qualifications of these gentlemen and the basis of their claim as "doctors" may be of interest. They are of two kinds. The first, as a rule, were coachmen or grooms in the first place, and having learned by experience the remedies and treatment for one or two common ailments, set up, on the strength of this meager knowledge, as general practitioners—in which role, of course, they are fakirs, pure and simple.

One man that I knew of this type, an Irishman, had the recipe for a blister ointment, which he kept a profound secret and which—especially in the treatment of spavins and bony enlargements—was by far the best that I ever used. He had once been, he told me, groom for a well-known veterinary physician in the old country, from whom he learned the recipe. Now this blister ointment was the only remedy that he knew how to make or how to use, and if he had confined himself solely to making and selling it, he would have been of

some use in the world. But flushed with his success with this one thing, he must needs hang out his shingle as a general practitioner, and the damage that, for many years, he was constantly doing in this line far more than offset the good that he accomplished with his ointment.

Another man, a Yankee farmer, had learned from his father how to castrate colts and in this operation he became very skilful and successful, so that his services were frequently sought at long distances from his home. Such success was too much for him; it turned his head and he set up, as indicated by the sign-board over his door, as "veterinary physician and surgeon." But, though naturally a good horseman, he had no knowledge of the drugs that he used—and, like all ignorant practitioners, he used them pretty freely. I knew of several horses whose deaths were undoubtedly due to his ministrations, and the wonder is that there were not more.

"Doctors" of this particular kind are not now quite as plentiful as they used to be, owing to the popular demand of these days that a doctor shall have a "certificate." And so a class of veterinary "doctors" has sprung up who are every whit as ignorant as the older type—and possibly even worse in practice, as they cannot boast even of some specialty in which they are proficient—but

who, nevertheless, claim to be educated men and always have their certificates framed and hung up in their offices. These certificates are from institutions that no one ever heard of, and in just what way they were obtained I am unable to say, except that they surely did not cost very much in either time or money. The owner of one of them, with a candor temporarily induced by bad whisky, once told me that he obtained it by attending a course of ten lectures which cost him one dollar each, and that he paid the lecturer five dollars more for the certificate. Was that all? "Yesh, that wush all." And I have no doubt that most of them were obtained in this or some similar way.

Now between these miserable fakirs and the really trained and educated veterinary physician the gulf is very wide indeed, so wide, in fact, that they are not to be measured by the same scale of comparison. And there is no danger of mistaking the one for the other; they do not look, act, nor talk alike. The fakirs exist because the regulars cannot make a living from the practice they could pick up in a country town, and thus a great many farmers who need the services of a skilled veterinarian are unable to secure them.

My advice to all who have sick horses is: Send for a good veterinary physician if such a one is available. If not, do not fall back upon the fakir,

but do the best you can yourself. By the use of a little common sense you can, in all probability, do better than he can. In any event, you are not likely to do worse—and you will, at least, be saved his fee.

The first thing to remember in home treatment is that horses are subject to the same disorders as those which afflict the human race. If, therefore, you can correctly diagnose the disease your horse is suffering from and know what remedy is used for a human being in like case, apply it to your horse, using from five to eight times the quantity.

COLIC

Colic is an ailment that almost every horse-owner is confronted with sooner or later. There is never any trouble in recognizing the symptoms. First, let me tell you what not to do. Do not give whisky, oil, nor any kind of a purge—the things that are most frequently given in such cases. The trouble is caused by sour, fermented food in the stomach and the gases it generates, and neither whisky nor cathartic has the slightest tendency to correct this. Use your common sense always and, before applying any remedy, stop to think of its natural effect.

Bicarbonate of soda, or common saleratus—a substance that every householder is pretty likely to have on hand—is a corrective for acid conditions and this, as the simplest remedy and one that has a direct effect upon the cause of the trouble, should be the first tried. Mix a half teacupful—or, in severe cases, rather more—with a pint of water, give this to the horse, and repeat every fifteen minutes. In a great many cases—probably more than half—this will relieve the trouble and no other medicine will be needed.

When this does not relieve, however, give a dose of the following:

One part aromatic spirits of ammonia, two parts spirits of chloroform.

Give the horse about two or three ounces of this mixture in a pint of slightly-warm water and, if necessary, repeat in twenty minutes and continue until relieved. This remedy very seldom fails to effect a cure, and although I have not had much trouble of this sort among my horses, I have for many years kept a bottle of the mixture on hand ready for emergencies.

I should add that country horses, owing to the more natural conditions under which they are kept, are not only less subject to colic than city horses, but generally yield more readily to treatment. The city horse, that has been long kept up

in a stable and fed heavily on grain, is not so easily cured.

WORM-KILLERS

Worms are generally found in horses that are in rather poor condition. Nature, always a good doctor, has provided a first-class remedy—green food—and if a horse has a run in a good pasture in summer and is carried through the winter in good shape, he is not likely to be troubled with worms. If it is necessary, however, to give some treatment in the season when green food is not to be had, the following remedies are good: Keep a lump of rock salt always in the manger and supplement it for a few days by giving a tablespoonful of fine salt night and morning in the feed. This will sometimes effect a complete cure in a short time.

Sulphur is also a good thing, and a little of it mixed with the feed for a few days often effects a cure.

Tobacco seems to be a very effective cure, though I generally prefer giving the other remedies a trial first. A tablespoonful of either smoking or chewing tobacco, rubbed fine and given in the feed night and morning for a week or two, is about the right dose. For the small, white

worms that infest the rectum an injection of water in which tobacco has been soaked is often a good method of treatment, as the trouble is frequently hard to reach by internal remedies.

When a horse becomes lame, the first thing to do is to locate the lameness. Often, especially at first, there is little or no swelling. But there is always heat in the injured part and a careful examination will generally find it. If the horse is lame forward the trouble is much more likely to be below the knee than above it—maybe in the back tendon or ankle or foot. It is very common, when the seat of the trouble is not readily found, to ascribe it to the shoulder, but as the trouble is much more apt to be lower down, the most careful examination should be made before coming to this conclusion.

There are many liniments on the market and some of them are very good, but plain, hot water applied persistently and followed by gentle rubbing is the best treatment. It is of little use to do this hastily; the water should be sopped on liberally with a soft cloth and the treatment continued for, say, fifteen or twenty minutes and then the part rubbed with the hands until perfectly dry. This should be done at least twice a day.

When the lameness is in the foot, it is not so easy to discover, but the injured foot will be a

little hotter than the other. If the lameness is caused by a bruise, the best treatment is soaking in hot water, and the horse should be kept off the hard road.

If the horse gets a nail in his foot—and almost every horse does, sooner or later—pull it out and immediately wash the hole carefully with hot water, followed by dioxygen—and be sure to wash clear to the bottom. This last is important, as otherwise suppuration may follow. Then pack the hole with sterilized cotton. If the horse does not go lame, no further treatment is needed, but if he does, the process should be repeated.

If the horse's hind legs stock up from standing too much in the stable, the deprivation of some of his more solid grain (especially corn) and the substitution of a liberal ration of bran will generally relieve the difficulty. An occasional dose of Glauber salts will do the same thing, but the bran ration is to be preferred—and in all ordinary cases is sufficient.

It occasionally happens that a horse gets hurt and that when the inflammation and lameness have subsided, an indurated swelling still remains. For such cases I have found the following the best of all remedies: Tincture of aconite root, three ounces; tincture of opium, three ounces; spirits of camphor, three ounces; iodide of potash (in fine

powder), four drams. Shake well before using; rub in thoroughly with the hand three times a day and always after using the horse. In treating swellings of this kind, you must remember that you are dealing with a condition that has become chronic and that a more or less long-continued treatment is necessary. This mixture is also an excellent liniment.

For galls, first have the harness fit properly; then keep the galled places clean and treat them with some one of the various gall cures that are for sale on the market. These are intended to cure while the horse is working and, if used according to directions, will do their work. There are several kinds that are good and seem to work equally well.

If in any way the horse gets cut or wounded, wash the wound perfectly clean with warm water and dioxygen; then, if necessary sew it up and protect it in some way so that the horse will not bite it. Then cover it with sterilized cotton and change the dressing frequently. Liniments are of no use; the secret of a speedy cure is to keep the wound perfectly clean.

For thrush, wash out the foot thoroughly and then put a little pulverized blue vitriol in the cleft. Cover this with cotton, packing it in thoroughly so as to keep out all dirt. In twenty-four hours

renew the application and repeat till the trouble is cured. Three or four applications are usually sufficient.

The few remedies I have here pointed out will cover, I think, most of the emergencies that, at one time or another, are sure to arise wherever horses are kept. I shall not take up the matter of treatment for chronic diseases and structural unsoundness—as founder, heaves, ringbone, spavin, etc. Animals having these unsoundnesses can often be made very useful, and a study of their treatment is not without interest; still, the best way, when practicable, is to sell them and let the doctoring be done by some one else.

I have used some other remedies than those here mentioned, but I think it is not necessary to take them up, partly because I do not like to recommend the use of drugs, and partly because the older I grow the less medicine I use. I used, for instance, to give aconite when a horse had a cold —and there are times when such treatment is not amiss; but I am convinced that, in the majority of cases, the horse does fully as well if given no medicine whatever. Simply make him comfortable, keep him in an even temperature, and substitute bran for his more solid and substantial grain rations.

Your success in home treatment will depend

upon the amount of attention you bestow upon your horses, confining yourself to simple remedies and applying them faithfully and painstakingly. Dabbling in drugs, with an imperfect knowledge of their therapeutic effects, is always dangerous and almost always followed by failure and loss. I have, perhaps, already dwelt sufficiently upon this point, but two cases that have come very recently under my notice illustrate it so well that I think they are worth relating.

A neighbor had a mare that came lame behind. It was nothing worse than a little wrench of her ankle and needed no treatment beyond a few days' rest and bathing with hot water. He sent, however, for a quack veterinarian who told him the leg needed blistering "from hoof to gambrel" and who applied an exceedingly savage blister ointment. Before the first blister had healed, he made a second application directly upon the raw flesh. The result, of course, was a terrible inflammation and swelling, and when this injury finally healed, it left the leg round, hard, and permanently swollen. I advised my neighbor, who came to me in his trouble, to use the liniment above recommended for indurated swellings; it greatly reduced it, but nothing could restore it to its natural form, and the mare—a young, handsome, and valuable one—was disfigured for life.

In another instance I was asked by a neighbor to come and examine a horse that he said "would not eat." I found the horse pitifully nibbling at a little hay, as if he wanted to eat, but immediately dropping it. I guessed at once that his mouth was sore and, on opening it, found the whole inside entirely raw! Inquiries disclosed the fact that a certain "veterinarian" had been treating the horse for what he called "kidney disease" and the raw mouth was the result of caustic liquids that the ignoramus had been pouring down the poor animal's throat. Of course the horse died, and I could find no reason to suppose he had ever had anything the matter with his kidneys or, in fact, any indisposition whatever, unless, possibly, a slight cold.

I will spare the reader any further account of such atrocities, although they are of constant occurrence. No one who sees them can help wishing that the fakirs might be treated with some of their own remedies.

The moral is: Do not meddle with any remedies that you do not understand—nor let any fake veterinarian do the meddling for you.

CHAPTER X

SHOEING

IN the first chapter I pointed out that the feet and legs of a horse, as they are the organs of locomotion, are the most important points and the first things to consider in examining him. It will therefore be seen that the matter of shoeing is a very important one and every horse owner should thoroughly familiarize himself with its principles.

The first thing to learn is the structure of the horse's foot. This is best done by first obtaining the fore-foot of a dead horse and leaving it out in the weather till the fleshy parts have decomposed and dried up. Then study it carefully: the thickness and form of the walls where the nails are driven, the form of the frog and the cavity which, in life, contained the fleshy part of the foot, can be seen at a glance. This is not only the best but it is the *only* way in which a clear idea of the subject can be gained; no number of diagrams and no amount of printed explanation can make it quite so plainly understood. The study can be made still more profitable by obtaining the feet of dif-

ferent kinds of horses—as a thoroughbred and a draft horse—and comparing them.

Transfer now your study from the dead foot to that of a young horse that has never been shod. You will observe that the foot is symmetrical in shape and that it stands on the ground level, with neither toe nor heel tilted up; that the walls and sole are of strong, firm texture; and that the frog is large and slightly yielding, like the heel of a rubber boot. You will see, too, that the frog and the walls, being a little lower than the sole, take the chief part of the horse's weight, the frog doing its full share. The whole foot is a beautiful piece of mechanism, intended by nature for supporting the horse and, by the elasticity of the frog, for guarding itself against concussion when on hard ground. If it were practicable never to shoe it, a large part of the foot troubles that horses have would be avoided. But as the foot was intended mainly for a grassy surface and for only occasional use on hard ground, the use of the domesticated horse on hard roads makes shoeing a necessity.

Next look at the foot of a shod horse. In nine cases out of ten you will find that the frog does not bear upon the ground at all, its function as a buffer thus being rendered useless and a double duty thrown upon the walls, which now support

the horse's entire weight. The structure of the foot, too, is somewhat modified, the frog being more or less shrunken and the whole foot drier and harder than in the unshod horse.

Now this departure from natural conditions is undesirable and usually unnecessary. It should be remembered that the object of the shoe is simply to protect the horse's foot from wearing away and becoming sore on a surface harder than that upon which he would travel in a state of nature and that its natural shape and functions should be interfered with as little as possible. It should be as close to the ground as conditions will permit and the frog should bear directly upon it.

Except in winter, when calks are necessary to keep the horse from slipping on the ice, the shoe should be entirely flat. It should be fitted very nicely to the shape of the foot, so that the walls bear evenly upon it all round, except from the bars back to the heel. Here it should be "eased" a little so that the pressure will be less than in other places. Corns are very likely to result if this is not done.

The shoe should be so put on as to allow the frog to bear a little upon the ground. With most shoers this requirement is the hardest of all to have carried out. The smith will point out to you that the heel of the shoe is thicker than the

toe and that therefore if the walls are pared down to their proper shape and no more, the frog will still be raised a little from the ground. This is generally true, and so the whole shoe should be heated and hammered out till the heel is slightly thinner than the toe. This, if properly done, will keep the bottom of the foot level, elevating neither the toe nor the heel, and will permit the frog to press upon the ground as it should. The shoe should be a trifle wider than the foot at the heel and should project backward beyond the heel a little—say, an eighth to a quarter of an inch on moderate-sized horses and a little more on larger ones.

This I have found the best of all ways to obtain frog pressure. The means most frequently employed are to use tips (shoes that protect only the forward part of the foot, leaving the whole after part to bear upon the ground.) But the great objection to tips is that, as the great majority of smiths put them on, they raise the toe and depress the heel—which is a bad thing for the horse and fully offsets any advantage they may bestow. In using full-length shoes this trouble is avoided. Often the method works like magic, and horses that have been constantly becoming lame from corns or bruised heels, when shod this way, show immediate improvement and travel off like entirely

different horses. More often, however, a little time is needed to work much change.

The hard rubber pads that are made for shoeing horses subject to bruised heels often serve an excellent purpose, especially on horses that are used constantly upon paved streets. With them the shoe, like the tip, is cut short and the heel and most of the frog bear upon the rubber. This gives frog pressure and also prevents concussion and, unlike the tip, has no tendency to elevate the toe. But as the pad is so made that its leather sole covers the whole bottom of the foot, the method recommended above is to be preferred whenever practicable. In the country it usually works better than the pad and often works equally well in the city.

In winter, unfortunately, no device has yet been found for taking the place of the sharp-calked shoe—and this, of course, does not admit of much frog pressure. If more natural conditions are observed in shoeing during the months that are free from ice, however, the horse will generally go through the winter all right with calks. Personally, I have found the shoe called the "Never-slip" the most satisfactory. In form it is a "snow shoe"—that is, its inside edge is bevelled so that the snow comes out of it readily, and its calks are made with the center harder than the

outside so that they are always sharp. Indeed, a set that has been used some on frozen ground are sharper—though, of course, shorter—than new ones. When worn out they can be taken off with a wrench and replaced by new ones. Many smiths dislike to put on "Neverslip" shoes, but they are enough better than the ordinary kind to make it worth while to insist upon having them.

When, as occasionally happens, circumstances make it necessary to elevate the heels to take some of the strain off the back tendons, the purpose is usually best accomplished by using a pad, with the shoe rather thin. This is better than a common shoe with heel calks and no toe calks, though the harm that is done by a shoe with calks is in its long continued use. For a few weeks or months it rarely does any appreciable damage.

The rules I have here given for shoeing are, of course, general; it would be impossible to formulate rules to fit each and every case. The important thing is for the horse owner to first fully understand the principles involved in correct shoeing and then to use his common sense in any case requiring special treatment.

CHAPTER XI

CARRIAGE HORSES

MANY years ago, in an article in one of the agricultural journals, I made the statement that breeders of trotting stock would, in many instances, do better to breed for type, rather than speed and that, while the production of really superior animals of any kind is never an easy or simple matter, it is nevertheless easier to produce beauty, finish, and action than extreme speed. I also expressed the belief that the supply of such horses would not, for many years, exceed the demand and that they would continue, for a long time, to bring high prices.

Events have fully borne out this opinion. For in the feverish anxiety to produce speed, a great many breeders paid little attention to such matters as showy action and beauty of contour and there ensued a shortage of handsome carriage stock which was keenly felt in the market. One result of this was the importation of distinctive carriage breeds from Europe—notably the Hackney and the French Coach—and a more or

less enthusiastic movement toward breeding them in their purity and also crossing them upon other stock.

At the present time, too, a great many breeders of trotting-bred stock are breeding for type more than for speed and have produced horses with an elegance of finish such as old-time breeders could hardly have foretold. But, notwithstanding this increase—and in spite, too, of the advent and popularity of the automobile, which, for long journeys, leaves horses entirely out of the reckoning—fine carriage stock was never so scarce in the market as now nor so high in price.

Before considering the blood that will best produce good carriage stock, let us see what a carriage horse should be. With the compactness and substance necessary to pull a carriage he should be always a beautiful animal, smooth in build, graceful in contour, and with the aristocratic look that can only come from plenty of warm blood. His action should be free, spirited and yet easy, and he should have at least a reasonable degree of speed at the trot. This latter requisite, which is not infrequently overlooked by those who attach an undue importance to high stepping, will, in my opinion, be more and more insisted upon as time passes.

The breeders of Hackney and French Coach

horses believe that these breeds can furnish animals of the requisite qualities and that they have produced many very fine ones is beyond dispute. The overwhelming majority of fine carriage horses in the United States to-day, however, are of strictly American breeding, nor is it necessary for the man who wants to raise such stock to look to the imported breeds. The materials are already at his hand if only selected with care and judgment. It has even been stated that the American-bred horse is preferred in the market. The truth of this, as far as judging a horse by his blood is concerned, may be doubted, but, judged as an individual, a certain type of horse is preferred and that type is most frequently produced from American blood. And, personally, I doubt if any horse of the imported breeds can equal in beauty, style and action the best horses of American breeding.

But without any well-established breed of American carriage horses, where do these horses come from? And where is the breeder to look who wants to raise horses like them? We may reply, off-hand, by saying that a very large number are more or less trotting bred, a statement that can be better understood from the fact, already mentioned, that there are to-day many breeders of trotters who aim at type, beauty, and finish rather

than speed. But this answers the question only in part for the blood of the standard-bred trotter is made up of different elements, and certain strains, conspicuous in some and undoubtedly having an influence upon their offspring, are lacking in others.

If we examine the pedigrees of American-bred horses that are of marked beauty and finish we find with sufficient frequency to make the matter worthy of note strains of thoroughbred, of Denmark (founder of the American saddle horse), and of that most beautiful of all families ever bred on American soil, the Morgan. These strains vary, not only in the proportion in which they are present but in their nearness and remoteness, but still throw on the subject enough light for us to say, with but little fear of contradiction from those who have studied it, that the blood which has most often produced our most beautiful carriage horses, is trotting, tracing through thoroughbred, Denmark, and Morgan crosses.

Of course, trotting blood, not having these strains (except thoroughbred, which is its most important component part) has also produced fine carriage stock and when it is known to be able to do this its antecedents do not matter. But in selecting stock for the purpose it would certainly be wise to choose not only animals possessing in a high degree, as individuals, the characteristics

most prized, but also having the strains of blood we have named, for when aiming at so high a mark it is desirable to have as many of the elements of success as possible.

To obtain a clear idea of the value in this connection of the strains I have named, let us go back a little in the history of American horses and see what these distinguished families really were. Let us first take the Morgan. This family has gone on record as the gamest, the most beautiful, and, all things considered, the nearest to perfection of any that America has produced. Though not as fast at the trot as some other families, they were all fast; they all showed uncommon endurance and stamina; they had the points of equine excellence and elegance that distinguished the Arab; and they bore themselves as superbly as the proudest of the aristocratic sons of the desert.

In every single respect except size they were ideal horses. Concerning the breeding of Justin Morgan, the founder of the family, there has been endless discussion, but of this we are certain—that the family had the prepotency that only comes of ancient and unsullied lineage. It is no wonder, then, that their blood should be found in some of the best of our carriage stock to-day and it is logical that we should look to it as an important element in breeding such stock.

It is a pity that such a family should not have

been preserved in its integrity and that its blood should be so largely lost to present-day breeders. But through the desire to breed extreme speed the Morgans were crossed with other families and the original type was very largely lost. Efforts are now being made to restore it, and if this is successfully accomplished and, by careful selection, the size increased a little (all of which can, unquestionably, be done, if sufficient time is taken) the advantage to American breeders will be very great. It will be quite a number of years, however, before all this can be done and a still longer time before the stock will be available to breeders as a distinct breed.

Let us now look at the thoroughbred strain. No other strain has played so conspicuous a part in the development of the standard-bred trotting horse: it is this, more than any other, that has given him his game qualities as a race-horse and his "breediness" and finish as a blooded animal. Its potency as a factor in fine road stock can be best seen, I think, by going back to the days when there was no recognized breed of trotters and when the thoroughbred was the only "blooded horse" known and recognized as such, in the country.

In colonial days and for a long period thereafter the blood of the thoroughbred was prized, in

most sections, above all other. In a country settled by Englishmen this was natural. Other kinds of horses could have been as easily imported and others were imported to some extent, but the horse that was the fastest in the world at the run, the direct descendant of Arabian progenitors, and whose very name had become a synonym for the qualities most prized in horse flesh, was naturally preferred.

When I was a boy, my father always raised a few choice horses, largely as a matter of pleasure, but partly for profit as he raised more than he could use and those that he was willing to sell brought very high prices. They were sold in Newport, R. I., where then, as now, fine horses were in keen demand. With less opportunity than now exists for selecting good breeding stock, he succeeded in raising carriage horses of a very high type. His mares were selected carefully for the type that he preferred, but, beyond mere hearsay and what could be judged by their appearance, it was often impossible to know their breeding.

One mare, however, which he greatly prized and whose offspring was always the finest, he knew more about. Her dam was a mare of unknown pedigree but showing good blood and of excellent road type, and her sire a stallion, claimed to be

an Arabian, that belonged with a circus that was showing at Newport. Of this horse's claim to Arabian blood I have no proof, but the appearance of the mare, whom I remember perfectly and all of whose colts I rode under the saddle, certainly bore it out. She had the dishing face, the clean limbs and head, the high-carried tail, and the peculiar elegance of contour that goes with the Arab race.

My father always bred her, as well as his other mares, to a thoroughbred stallion, but he was very careful to select a smooth, compact, short-jointed one; most thoroughbreds he considered too slender and rangy to produce the best carriage stock. He found his ideal sire in De Wolf's Matchless, a horse that stood in Bristol, R. I. Curiously enough, this horse whose get, considering the diversity of mares that were bred to him, were of remarkable finish and many of them very showy in harness, was never fully appreciated by horsemen until after his death.

I recall an incident in the latter days of my father's horse-breeding which, though trivial, I may perhaps be pardoned for telling. The keeper of a young stallion of Hambletonian blood whose services he wished to see tried on good mares, came to show him the horse. After looking him over he condemned him as "lacking in style and too coarse, especially in the head," and

though he greatly valued speed at the trot, he expressed his intention of continuing to breed to a thoroughbred sire. The incident shows how closely cherished was the old-fashioned but praiseworthy ideal that a horse must be *fine all over* and therefore as clean in head as in limb, and that his style—his way of carrying himself—must be fully commensurate with his high breeding.

Personally, the handsomest horses I ever raised were from strictly thoroughbred mares, bred to a trotting-bred stallion. One pair of them, from a daughter of Lexington, were strikingly beautiful and would doubtless have brought a high price, had I cared to sell them. But these horses, it must be admitted, were not of the most approved carriage type; they were hardly compact and heavy enough and I mention them only as illustrative of the potency of the thoroughbred cross in producing "breedy," aristocratic looking horses.

With the Denmark strain I am much less familiar. But no one who has seen the superb saddle horses that are bred in Kentucky, direct descendants of Denmark, and who has observed how often this blood appears in the pedigrees of our handsomest carriage horses can doubt for a moment its value.

I wish now to say a few words about a race of horses which have never had much direct part

in the development of our American stock—the Arabian. Indirectly, indeed, through the thoroughbred, it has always made itself felt, but in its purity it has never been used very much in this country. And yet it is almost inconceivable that so beautiful a breed could not be advantageously used.

From time to time breeders of thoroughbred stock, misled by the fact that the Arabian was the source of all that makes the thoroughbred what he is, have sought to improve the latter by a fresh infusion of Arabian blood. But it was long ago found that the thoroughbred, as a race-horse, was not improved by the cross, nor is this to be wondered at, for the thoroughbred being faster than the Arabian, it is not reasonable to suppose that his speed could be improved by crossing with any slower stock, even though it be the same stock from which he originally sprang.

In the development of the trotting horse, too, Arabian blood has had little part. The cross has been tried, but thorough blood has been the main factor in making the trotter what he is to-day.

Although always an admirer of the Arabian horse, these facts led me, for many years, to believe that he had already fulfilled his mission and that his qualities were best obtained, in modern times, through the medium of the thoroughbred.

But breeding race-horses and carriage stock are two very different things, and now, on the shady side of fifty, I find myself reversing this opinion and believing that in a great many cases where beauty, style, elegance of finish, good disposition, and endurance are desired rather than extreme speed Arabian blood could be used to great advantage. What is most frequently urged against the Arabian is that he is a comparatively small animal. But this feature sinks into insignificance when compared with his other qualities; and it must be remembered that his blood has been used in the development of breeds of horses fully as large as our average carriage stock.

An Arabian mare that came into my possession some years ago gave me, perhaps, the keenest realization I had had of what the race really is to-day—for, almost unconsciously, in thinking of the Arabian horse, we picture him as in the remote past. This mare was fifteen hands high, white in color (though her skin was dark and this dark color showed a little around her eyes and nostrils), and in conformation she was nearly perfect. I have owned many fine horses, but I do not think any of them was quite her equal in beauty. She was nearly twenty years old when she came to me, but she showed no sign of age and I never knew her to give any indication of weariness.

I cannot say that I expect to see much use made of Arabian blood in the near future, much as I would like to see it tried, for in horse-breeding, as in other things, habits of thought become strongly fixed and there is also comparatively little Arabian blood in the country. I believe that interest in it is growing, however.

Meanwhile we must confine ourselves to the strains of blood that are already available. And no one who sees such horses as "Glorious Thundercloud," as well as many others of like type can doubt the ability of American blood to produce the highest type of carriage horses. What is now most needed is that greater fixity of the carriage type which can only come through continued breeding with only this type in view—a result which we have every reason to hope for in the near future.

CHAPTER XII

DRAFT HORSES

THE draft horse, more than any other, is an evolution—or, more properly speaking, a modification—of the horse as nature formed him, brought about by the necessities of man and his skill as a breeder. He is a far greater departure than any other from the original type. For the horse, in a state of nature, is never very large; he is formed for speed and for living on a grass diet, and his first adaptation to man's uses was doubtless in the carrying of comparatively light burdens and in traveling with a speed rather greater than less than that which he first possessed.

But the draft horse has little speed; his chief use is in the moving of heavy burdens, and he is more dependent than other horses upon a grain diet. He is also so much larger and of such different characteristics and general appearance that when compared with a horse of racing or carriage blood it is difficult to realize that both sprang from the same source.

This striking difference between the draft horse

and all other types must always be considered if we are to understand fully his possibilities and limitations. In all other types, however modified to suit such different uses as riding, driving, and racing, the development has been mainly along the lines of the animal's natural traits and qualities—as his speed, endurance, and beauty of contour. Even in coach horses, which have often to pull a considerable load, this holds true. But the draft horse is so modified as to serve a totally different purpose from that which nature intended and size and strength, rather than speed, endurance, and grace of outline, have always been the chief things aimed at in his development.

This great change is very often ascribed wholly to the art of man. But it is well to remember that the art of man alone, without the right environment, could never have brought it about. The draft horse is peculiarly the product of the temperate zone and then of only its comparatively level and fertile sections. In the far north, in a mountainous country, or in the tropics his development would have been impossible, nor can he, even now, be bred in such regions and made to retain his standard size—a fact that should always be kept in mind by all who contemplate breeding him.

Now, in departing so far from the purposes of

nature, in bringing about a change in the animal in which not only the skill of man but the influence of soil and climate have been pressed into service, there have been certain great and unavoidable losses—for it must be remembered that the loss of grace, of activity, and of endurance at other gaits than the walk, have all been incidental and were not matters of intention with those who developed him. It was simply that, if all these things had been considered, it would have taken a great deal longer to breed him to his present size, if it could ever have been done at all; and so, in making size and strength, always the chief aim, much had to be sacrificed and other qualities were lost along the way.

With his increase of size also came a greater coarseness of structure, most noticeable, perhaps, in the feet, which never average as good as those of road horses. But the defects of conformation we so frequently see in draft horses, such as upright shoulders, long backs, drooping rumps, and ill-proportioned limbs, were never an evolutionary necessity; they came about through the insane striving of the breeder for great size, to the sacrifice of everything else and should not be tolerated in a draft horse any more than in any other.

With these facts in mind we can better judge

what a good draft horse should be. The best draft horse is the one that, with the needful size and strength for an animal of his type, is most truly *a horse* and not a lumbering equine monstrosity. He should be active and easy in his movements, of a cheerful, lively temperament, and compact and handsome in build. As regards the points of his conformation, there is a very common idea that he should be judged by a different standard from that which is applied to road stock. But if examined critically, the well-formed draft horse, as shown in our chapter on the points of the horse, will be found to possess the same points of excellence that characterize a good road horse, combined, of course, with those modifications of conformation which the purpose for which he is intended have made necessary.

To put it in a little different way, he should be judged first as a horse and then as a draft animal. For instance, the draft horse is wide in the chest and his legs wider apart than in a good carriage horse. But, *in addition to this breadth*, he should have the depth of chest that is a good point in all horses. He should also have the strong loins, short back, and slanting shoulders that go with all good horses, and his limbs should be well-formed, clean, and flat. That they cannot be as clean and flat as those of a thoroughbred signifies

nothing, and is no argument against the standard to be applied, for again the type of horse must be taken into consideration and the limbs as clean and flat as his greater coarseness of fiber will admit. It is needless to say that a horse, of whatever type, should be homogeneous throughout, and the limbs of a thoroughbred under a draft horse would be sadly out of place.

It need hardly be said that in the raising of draft stock it is always most profitable to produce the best. For, barring the greater cost of good foundation stock, it costs no more to produce a good horse than a poor or indifferent one, and his value is much greater. In fact, mediocrity in horseflesh, is a thing that there is little profit and no interest or satisfaction in producing. The latter consideration can no more be ignored by intelligent farmers than the former, for the production of the best draft horses, like the best of any other kind, calls for skill and attention to detail and knowledge of the principles of breeding—matters that are always of absorbing interest and that bring pleasure as well as profit into the business.

Breeders of road stock sometimes speak slightingly of the skill required to produce draft animals, but every intelligent breeder who has raised both kinds knows that this contemptuous

view-point is unjust and usually arises from not realizing the fact that the production of the best of anything, whether road or draft horses, or oxen or pigs, or fruits and vegetables, is never easy. It cannot, of course, be denied that the road horse is the higher type of the two. But his production is also a matter of greater risk and anxiety and more care and pains are required for his proper breaking and training. Not all men have the right qualifications for raising him successfully. To a great many farmers the draft horse, with his lesser liability to accident, his more even disposition and temper, and the greater ease with which he can be broken and fitted for market, offers a more inviting field.

I would not be fair to the draft horse if I did not mention one matter in which he is very often misjudged—his intelligence. A very common impression among those who are not acquainted with him is that his tractability and the ease with which he is usually broken to harness are owing rather to a sort of ox-like docility than to his ability to understand what is required of him. But in a life-long experience with horses of all kinds I could never perceive that the draft horse was one whit less intelligent than other equine types.

Indeed, if there is any difference, it is the other way, for the draft horse, being by temperament

more free from nervous excitability, his mind is usually in better condition to absorb instruction and to comprehend what his master requires of him. Fire engine horses which, though not of the most pronounced draft type, are nevertheless much more of the draft type than any other, are a good exemplification of this.

The farmer who wishes to raise draft stock has two distinct ways open to him and both are good. If he has good judgment and a right understanding of the requirements of the case he can select large, handsome mares of unknown breeding and breed them to a pure-bred draft stallion. It is highly important that the stallion be strictly pure-bred, a good representative of the breed to which he belongs, possessing individually good points throughout.

A great many very fine draft horses are produced in this way and it should be remembered that, when sold for other than breeding purposes, pedigrees count for little. The horses sought for pulling a coal truck or a fire engine must be, *individually*, what is wanted, and if they fail in this vital requirement, the fact that they are Percherons or Clydesdales will not help them one iota. In fact, all geldings, of whatever type (and more than half of the horses sold in the market are geldings) must stand solely upon their in-

dividual merits, and mares that are used in the same way must be judged very largely by the same standard.

But, while this holds true as far as stock that is sold in the market is concerned, it is blood that tells in its production, and the farmer who can afford to buy pure-bred stock on both sides may be sure that it will prove a good investment. Apart from the chance that this gives him to sell some of his stock for breeding purposes, it makes him more certain of the quality and uniformity of all his stock than he can ever be when using mares of unknown breeding.

In buying pure-bred animals, however, he should never depend too much upon the mere fact that they are pure-bred, but should select them with just as much reference to their points as individuals as if he were buying common stock. Failure to do this will surely result in disappointment—and disappointment, too, of a peculiarly heart-sickening kind; for there are few more depressing agricultural sights than an animal having a long, recorded pedigree and yet failing in the very points that such distinguished lineage should promote. It is true that the progeny of a pure-bred animal that has not the best of points will frequently revert or "take back" to ancestors that had better ones, but to depend

upon this possibility is taking much too long a chance. The reversion, too, is just as likely to be to inferior ancestors as to superior ones.

Animals that are themselves individually good and that also trace back through individually good ancestors are the kind to buy for breeders. For it will be readily seen that, however good a breed may be, if care is not exercised in the mating in each generation the offspring will, as a rule, fall below the general average and the breed will deteriorate.

It is hardly my place here to say which of the draft breeds is the best. The Percherons are the greatest favorites and it may be doubted if there is any better breed. But there is no reason to believe that there are not others equally good; other things being equal, the breeder had best be guided in his choice by his personal preference. But before buying, he should carefully examine the stock that is in keenest demand for practical purposes in the open market and see if the breed of his choice conforms to it in characteristics and general type.

I would also caution all against breeds that are excessively hairy on the legs. Not only is this an unsightly and unequine feature, but it serves no good purpose and—what to the breeder is still more to the point—it is unfashionable in the

market. For the fashion in draft horses has improved of late years and the fancy teams that we see in the cities are more trappy in their movements and look more like horses and less like pigs or elephants than those of a few years ago.

It is the fashion to have draft horses excessively fat when offered for sale in the market. So universal is this custom that there seems to be no help for it, though it is greatly to be deplored. It serves no good purpose, as far as the use of the horse is concerned, for this soft fat, which is put on when the horse is idle or practically so, must all be worked off and good, hard flesh worked on before he is of much use for hard service. It also conceals, to some extent, bad points in conformation, and a pair of horses that are quite deficient in good points, if only of large size and closely matched, will, if excessively fat, often sell very well in the market.

This is not as encouraging as it might be for the man who is taking pains to raise good ones, but he may console himself with the fact that, however good a disguise fat may be, no amount of it can make a poorly put up horse look quite as well as one that is well formed and "horsey." Nor can he, any more than his competitors, afford to despise such factitious aids as may make his horses sell better; condition, grooming, close

matching, and so handling his stock that it will "show well" all count. But, other things being equal, the reward is, as it should be, to the man who raises the best horses.

All of our breeds of draft horses, without exception, have been imported from European countries; not one has been developed on American soil. This, in view of our achievement in the development of the American trotter as a distinct breed, may at first seem strange, but the cases are by no means similar. All through the earlier years and until a comparatively recent date in this country there were very few horses bred expressly for draft purposes and the majority of those that were needed for heavy work were simply selected for their size and strength from the ordinary rank and file in the market. Thus a great many of them, except in size, did not differ very greatly from the road type and among them were often many excellent roadsters.

The finest draft teams of forty years ago would look light and of decidedly different type if placed alongside of our best specimens of draft stock at the present day. When heavier horses were needed, we found in the European breeds what we wanted, all ready-made, and there was no need, as with our trotters, to develop a breed of our own. There is still room for much improvement, how-

ever, and as the true standard to which the draft horse should conform becomes more fully realized by breeders, the raising of stock of this kind will doubtless attract a greater degree of skill and attention and we may reasonably expect to see more representatives of the draft horse as he should be—a draft animal but still a horse.

CHAPTER XIII

THE EVOLUTION OF THE TWO-MINUTE TROTTER

WHEN Lou Dillon first trotted her mile in less than two minutes people very naturally exclaimed, "Wonderful!" But the production of a horse that can do this is probably even a greater achievement than the majority suppose. And when we reflect upon the comparatively short time that has elapsed since the trotters were first registered as a distinct breed, and that even then it was composed of so many and such heterogeneous elements that thoughtful horsemen conceded its claim to be regarded as such with many reservations, the exploit may well be regarded as one of the great achievements of the age, yielding in brilliancy to none in the long annals of horses and horsemanship.

That such animals as Lou Dillon, Major Delmar, and other great trotters are in no wise the result of chance nor even of the wisdom and skill of any one horse-breeder is self-evident. They

represent many lifetimes of study, experiment, and research and crown the labors of many bygone horsemen in a field where, perhaps more than in any other, one must, to attain success, be in close touch with Nature and possessed of an intimate knowledge of her laws. To describe their evolution in such manner as to show clearly how it was brought about it is necessary for me not only to refer to the efforts of American horsemen since we first began to breed horses for speed at the trot, but to take a brief glance at the horses of an earlier period.

In earlier days, as pointed out in the chapter on carriage horses, thoroughbreds were very naturally regarded as the most to be desired of all animals and, whenever a farmer could, he secured the services of a thoroughbred stallion for his brood-mare. Such horses, however, were few in number as compared with those of humbler origin and the majority of farmers had to content themselves with such stock as was available. Thus the breed of American horses, if it could be called a breed at all, was of an extremely composite character and included not only the blood of nearly every type of English horse then in use, but also that of the little horse of Canada, commonly called the Kanuck. One distinct breed sprang up, the Narragansett pacers of southern

Rhode Island, now known to have been of Andalusian origin, but these horses were chiefly bred in their purity for export and it is doubtful if they left much impress upon American stock in general.

With a native stock composed of so many elements and often bred with little reference to pedigree, it is no wonder that speed at the trot, when it first showed itself, seemed more a matter of accident than anything else. That it was not looked for by the breeders of the earliest celebrities is certain, for Dutchman was first found by Hiram Woodruff working in a string-team on a brick-wagon, and Flora Temple, before her career as a trotter, was used by a drover to haul his gig. But let us look at the breeding of a few of the old-time performers and see if it throws any light on the matter of speed at the trot.

Trustee, the first horse to trot twenty miles in an hour, was by imported Trustee (thoroughbred); his dam, Fanny Pullen, largely of thorough blood.

Dutchman, though his breeding is not definitely known, was said to be sired by a thoroughbred horse, and both his appearance and characteristics indicated a goodly percentage of thorough blood.

Lady Blanche, foaled in 1829, was by Abdallah, a son of Mambrino, by Imported Messenger (thoroughbred).

Lady Suffolk, foaled in 1833, was by Engineer, a son of Imported Messenger (thoroughbred); her dam by Plato, also a son of Imported Messenger.

Flora Temple, foaled about 1845, was by One-Eyed Hunter, a son of Kentucky Hunter (thoroughbred).

We find in every one of these horses a large proportion of thorough blood; two out of the four whose breeding is known are descendants of Messenger, and Lady Suffolk is not only inbred to Messenger but is only one remove from him on her sire's side and two on her dam's.

Two old-time stallions, though their fame did not come till much later, should also be mentioned with the early trotters:

Abdallah, foaled in 1823, was by Mambrino, a son of Imported Messenger; his dam the "trotting mare" Amazonia.

American Star, foaled in 1837, and subsequently noted as a sire of speed-producing daughters, was by American Star; his dam by Henry and his granddam by Messenger.

It would seem to be obvious that thorough blood was an important element in the make-up of a trotter and also, judging by the examples at hand, that it was well to have it come through Imported Messenger. And I may as well say here as anywhere that events have proved this to be a

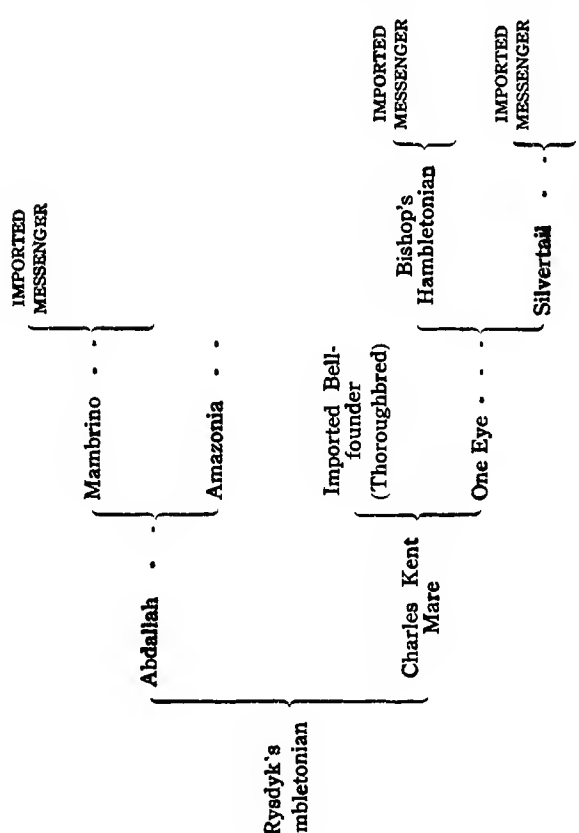
fact and that in Imported Messenger originated the best strains of trotting blood now in our country. But how little this was then understood or appreciated is shown by the fact that Abdallah, now honored as the sire of that greatest of American trotting sires, Rysdyk's Hambletonian, was allowed to die through neglect and starvation on a sandy beach on Long Island. Apart from the pathetic spectacle of the grand old horse perishing in this ignominious and miserable way, the loss thus unconsciously occasioned to the interests of trotting-horses is a matter for deep regret and recalls the scriptural text, "My people are destroyed through lack of knowledge."

There was a great deal of groping in the dark in the breeding that followed and a great many bitter disappointments and heart-sickening failures. A constant difficulty was that many of the stallions in use were of such mingled strains of blood that they were uncertain in transmitting their qualities to their progeny. The principle that "like begets like" is only operative among animals of a pure breed, and when a stock-horse is of such mixed lineage that his son or daughter is liable to "take back" to any one of a dozen ancestors, all different, there is little pleasure or satisfaction in breeding. The introduction of more thorough blood would have added to the pre-

potency, but, despite the evidence to the contrary, a belief prevailed that thorough blood was antagonistic to the trotting action and therefore to be kept as remote as possible. It thus came about that some rank quitters were bred, horses that, although they had speed, could not stand up to a race of broken heats. And it has been said, with much reason, that "God hates a quitter."

The number of blanks in the lottery (for so it was then frequently called) of breeding caused serious reflection upon the course being followed and more than twenty-five years after the days of Dutchman and Flora Temple some very intelligent horsemen felt that in many of the essential qualities of the race-horse the earlier celebrities had never been surpassed and that therefore the improvement in trotters was much less than was commonly supposed. Looking back now, however, one cannot but feel that in reality a great advance had been made. For, not to mention other sires, the great Rysdyk's Hambletonian had been bred and was now founding a family destined to be without a peer in the racing world and, notwithstanding the innumerable failures and disappointments and blunders in breeding, nothing was now more certain than that trotters were begotten by trotters. A new and distinct breed, in fact, was in process of formation.

Familiar as the pedigree of Rysdyk's Hambletonian is to horsemen, I here subjoin it—partly



because any account of American horses would be incomplete without it and partly for the benefit of such of my readers as do not already know it. It is worthy of thoughtful examination and shows pretty clearly where the speed-producing power came from. The horse himself certainly could not be called handsome, nor was he specially speedy —2:40 or 2:45 being probably about his gait. But he was a horse of great vitality and stamina, and illustrates, as few stallions do, the truism that the value of a stock-horse lies not in his own performances but in those of his sons and daughters.

There were many intermediate steps to be taken, however, between the founding of this family and the production of the two-minute trotter.

There are two ways by which the prepotency of a new breed can be rendered greater and its type more firmly fixed; first, by inbreeding; second, by an occasional fresh admixture of that pure strain of blood which forms its most important component part. After the establishment of the Hambletonian family the first method was followed with renewed zeal and with fine results. Many horsemen, pondering on the bloodlines of the great sire, now began to question whether it might not be wise to go back to the fountainhead and add to the blood of Messenger a little more of the thoroughbred strain.

As a matter of common-sense, Messenger was surely not the only thoroughbred that could beget speed at the trot, however gifted he might be in that line; the progeny of Trustee, Bellfounder, and others were speedy at the trot. Leland Stanford was the greatest advocate of the thoroughbred cross, arguing that, as the thoroughbred already possessed all the qualities desired except the ability to trot fast, the more thorough blood in the trotter the better, even to the extent, if it were possible, of simply engrafting the trotting action upon the thoroughbred horse. He purchased Electioneer and bred him to strictly thoroughbred mares.

This was regarded as an extreme experiment, even by those friendly to the thoroughbred cross, for few believed that it was wise to have it quite so near as that. But the stallion, Palo Alto, 2:08¾, was a result of this way of breeding, and the California stock rose to fabulous prices. It was purchased largely by Eastern breeders and more than ever before trotters began to look fine and bloodlike.

Another factor that tended to the more rapid evolution of speed was an increased attention to the choice of the dam. The old-fashioned idea that good blood was of more importance in the sire than in the dam was a false one. It had its

origin, not in any observed preponderance of prepotency on the sire's side, but simply in the fact that a mare could only perpetuate her qualities by the slow process of single births, whereas a stallion could be the father of a great number of foals in a single year.

But it is quality, not numbers, that counts; the man in the scriptural parable justly reckoned the one pearl of great price more valuable than everything else he possessed. Nature gives but sparingly of her very best, in any event, and when it was demontsrated by experience and cold, actual dollars and cents that the single foal of a choice mare was sometimes worth more than all the foals in toto that his father ever produced from mares less carefully selected, then brood-mares rose to their true place of honor. The Arabs knew the value of their mares hundreds of years ago, but we often have to re-learn lessons which have been thoroughly mastered at some time in the past.

When Jay-Eye-See first trotted his mile in 2:10 on the track at Providence, Rhode Island, his speed was regarded as phenomenal and there was naturally more or less discussion of the chances of ultimately lowering the trotting record to two minutes and the length of time it might take. As a matter of fact it took nearly twenty years. Whether this is a long time or not depends upon

the point of view; undoubtedly, in the eyes of many it is. But considering the low records with which we are dealing and the fact that the breed of American trotters must still be classed as a new one and therefore of less prepotency and fixity of type than it will ultimately have, I do not think that the time can properly be considered a long one, but rather the reverse.

So much wonder is often expressed by those unfamiliar with the education of the horses at the amount of training bestowed on a trotter—"especially," as they say, "as he was bred for a trotter and so ought to trot fast of his own accord"—that I think I should add a few words on this point. Trotters often require considerable training chiefly because, though the trot is undoubtedly a natural gait, it is not the gait at which the horse naturally goes at his greatest speed. For the same reason it is often necessary for a horse to get thoroughly over the flightiness and giddiness of youth before he is fit for great performances on the track. There are, of course, cases of phenomenal precocity, just as there are in the human race, but it may be doubted whether great precocity, in either horse or man, is ever desirable in the long run, and the saying of Hiram Woodruff, many years ago, that "the best trotters never reach their best speed without a

great deal of handling," is probably as true to-day as it ever was.

Can our trotters be improved still further? There is no question about it, but in looking forward it is well to keep two things in mind: first, that we are approaching the point where greater speed at the trot will be impossible and that therefore the lowering of records must be constantly slower and in less degree; and second, that great improvement may be going on, even though records be not materially lowered. The increased fixity of type that is sure to follow; the higher average of speed for all trotting bred horses; the beauty and finish that have already come from the fine blood-lines in use and which, as time passes, are destined to become more and more general—all these things we may regard with no less pride and satisfaction than the occasional exhibition of great speed.

END

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The Farmer's Cattle. In this volume the problem discussed is two-fold, one of breeding and the other of care. The breed is determined largely by the use to which the farmer wishes his cattle put, whether for dairy or beef purposes. Their care is affected to a certain extent by the same consideration but not so largely. For the average farmer a combination of the two is usually most desirable, and it is in this light that this book discusses the problem. All of the information is designed to avoid unnecessary expense and to save the farmer from rushing into extreme and costly experiments or wasting his time on valueless mongrel strains. The care of calves is discussed in length, as also the stabling and feeding of milk cows and the feeding of the stock destined for the market.

The Farmer's Hogs. It was once the boast of Illinois, then the biggest grain producing state of the Union, that 90 per cent. of the corn raised in that state was fed in the country of its origin. Probably 70 per cent. of that amount was fed to hogs. That condition still holds in a large measure. Hence this book is designed to aid the practical farmer in selecting the best hogs for market purposes as well as for home use, and to advise him as to their care and feeding so as to insure a living profit on their cost and the cost of the grain necessary to feed them for market.

The Farmer's Poultry. It is a proved fact that there is large profit to be made from the raising of poultry but not by the amateur who rushes into it without knowledge or experience. In this book is given the fruit of many years experience of a man who has made poultry raising pay. The birds dealt with are not the expensive exotics of the poultry fancier but the practical varieties with records as good producers and a good name in the market. The reader is taught how to provide shelter for his poultry that shall keep them comfortable and safe from vermin of all kinds without involving the builder in prohibitive expense. The objective point is poultry as a by-product of the Farm that shall provide amply for the farmer's table with a margin for the market.

The Farmer's Vegetable Garden. This is designed especially for home growing with some reference, however, to the possibilities of market use of over supply. It gives the latest and best advice on the raising of the staple vegetables, such as potatoes, cabbages, beans, peas, turnips, and so forth. It also shows the farmer how, without material trouble or expense he may enrich his table with new varieties and lengthen the season of his garden's productiveness. It is a manual for the gardener who has only odd times to devote to his garden and its advice is intended to enable him to use that time to the highest advantage.

Farm Planning. It is a vexing problem with every practical farmer to get the greatest possible use out of his land with the least possible waste. A stony hillside is not suitable for the raising of wheat but it may furnish an excellent location for an orchard. A piece of swampy bottom land may not be ideal for barley but with proper drainage and cultivation it may be unexcelled for a vegetable garden. This book deals with just such problems and also with the placing of farm buildings, yards, and so forth, in order to make them fit in, so that the farm may be kept constantly at its highest pitch of usefulness.

The Fine Art of Fishing. By Samuel G. Camp. Combines the pleasure of catching fish with the gratification of following the sport in the most approved manner. The suggestions offered are helpful to beginner and expert anglers. The range of fish and fishing conditions covered is wide and includes such subjects as "Casting Fine and Far Off," "Strip-Casting for Bass," "Fishing for Mountain Trout," and "Autumn Fishing for Lake Trout." The book is pervaded with a spirit of love for the streamside and the out-doors generally which the genuine angler will appreciate. A companion book to "Fishing Kits and Equipment." The advice on outfitting so capably given in that book is supplemented in this later work by equally valuable information on how to use the equipment.

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The Horse, its Breeding, Care and Use. By David Buffum. Mr. Buffum takes up the common, every-day problems of the ordinary horse-user, such as feeding, shoeing, simple home remedies, breaking and the cure for various equine vices. An important chapter is that tracing the influx of Arabian blood into the English and American horses and its value and limitations. Chapters are included on draft-horses, carriage horses, and the development of the two-minute trotter. It is distinctly a sensible book for the sensible man who wishes to know how he can improve his horses and his horsemanship at the same time.

Intensive Farming. By L. C. Corbett. The problem as presented in this book is not so much that of producing results on a small scale because the land is no longer fertile enough to be handled in an expensive manner but rather one of producing a profit on high priced land, which is the real secret of intensive farming. This book will take up the question of the kind of crops, and method of planting and cultivation necessary to justify the high prices now being charged for farming land in many sections. Its publication marks the passing of the old style, wasteful farmer with his often destructive methods and the appearance of the new farming which means added farm profit and proper conservation of the soil's resources.

Leather and Cloth Working. Edited by Horace Kephart. This book is designed to give competent instruction in the making of the outdoor paraphernalia into which leather and cloth enter, such as tents, sails, sleeping bags, knapsacks, blanket rolls, and so forth. It has the double advantage of reducing the cost of the equipment and minimizing the risks of loss or accident when away from civilization. The cutting or patching of a sail or the repair of a sleeping bag may seem like a simple matter, but knowledge of how to do it may often spell the difference between safety and comfort or danger and a very high degree of discomfort.

Making and Keeping Soils. By David Buffum. This is intended for practical farmers, especially those who wish to operate on a comparatively small scale. The author gives the latest results as showing the possibility of bringing worn-out soil up to its highest point of productiveness and maintaining it there with the least possible expense. The problem of fertilization enters in as also that of crop rotation and the kind of crops best adapted to the different kinds of soil.

The Motor Boat, Its Selection, Care and Use. By H. W. Slauson. The intending purchaser of a motor boat is advised as to the type of boat best suited to his particular needs, the power required for the desired speeds, and the equipment necessary for the varying uses. The care of the engines receives special attention and chapters are included on the use of the boat in camping and cruising expeditions, its care through the winter, and its efficiency in the summer.

Outdoor Signalling. By Elbert Wells. Mr. Wells has perfected a method of signalling by means of wig-wag, light, smoke, or whistle which is as simple as it is effective. The fundamental principle can be learnt in ten minutes and its application is far easier than that of any other code now in use. It permits also the use of cipher and can be adapted to almost any imaginable conditions of weather, light, or topography.

Planning the Country House. The builder of a house in the country or in the suburbs is frequently forced to choose between two extremes—his own ignorance or the conventional stereotyped designs of mediocre architects and builders. This book provides a solution by presenting a number of excellent plans by an expert architect of wide experience in country house building, together with a plain statement of the problems which the builder must face, and the most suitable and advisable methods of solving them. A sufficient number of plans are presented for a liberal choice or to suggest the very house that the reader has been looking for.

Rustic Carpentry. Edited by Horace Kephart. Every year the number of dwellers in summer cottages of the smaller type increases and every year more and more people are giving attention to the beautifying of their own summer places with porch gates, fences, lawn seats, summer houses, and so forth. The country carpenter is not always available and frequently not dependable. This book answers the call for information as to how the owner of a summer house or summer cottage may be his own carpenter, building his own furniture, constructing his own porches, adorning his place with attractive fences, seats and so forth. Incidentally it opens the door to a most attractive way of spending one's leisure hours on a summer vacation.

The Setter. As the hunting dog "par excellence" the setter will only be treated with direct reference to his use before the guns. A practical method of putting a puppy through the necessary preliminary training before he takes the field, is described, as also the proper use of the broken dog in actual hunting or in field trials. As in our other dog books special attention will be given to the care of the dog in the kennels, type and qualities as affecting breeding, and simple remedies for the ordinary diseases.

The Scottish and Irish Terriers. By Williams Haynes. These two breeds are included in one book because of their general similarity of type, habits and use. Both have been increasing in popularity greatly in recent years. This book responds to a widely felt need for a common-sense manual which shall describe the breed, its noteworthy characteristics, points to be observed in selecting a dog, and the training of the dog after selection. Remedies for the ordinary diseases are described and advice given on the construction and care of kennels in a comprehensive and feasible manner.

Sheet Metal Working. Edited by Horace Kephart. Sheet metal enters into many of the articles that constitute an important part of the camper or canoeist's outfit such, for example, as baker's ovens, cups and pans, not to mention the numberless cans, boxes and cases which must find a place somewhere in the outdoor man's bags. This book teaches the reader how to obtain exactly the thing he wants because it teaches him how to make it himself. Also it is an excellent insurance against discomfort in the woods by its practical advice in the matter of rough and ready repair and refitting.

Sporting Firearms. By Horace Kephart. Mr. Kephart has done for the user of the shotgun, the rifle, or the revolver what he did for the camper and woods cruiser in "The Book of Camping and Woodcraft." All three arms are dealt with from the standpoint of the every-day non-professional user, and common-sense advice is given as to the makes, calibres, and types for the various uses. Even expert marksmen will find in this book possibilities of their favorite weapon suggested or described, of which they had not dreamt before.

Tracks and Tracking. By Josef Brunner. After twenty years of patient study and practical experience, Mr. Brunner can, from his intimate knowledge, speak with authority on this subject: "Tracks and Tracking" shows how to follow intelligently even the most intricate animal or bird tracks. It teaches how to interpret tracks of wild game and decipher the many tell-tale signs of the chase that would otherwise pass unnoticed. It proves how it is possible to tell from the footprints the name, sex, speed, direction, whether and how wounded, and many other things about wild animals and birds. All material has been gathered first hand.

Wing and Trap-Shooting. By Charles Askins. The only practical manual in existence dealing with wing shooting with the modern gun. It contains a full discussion of the various methods, such as snap-shooting, swing and half-swing, discusses the flight of birds with reference to the gunner's problem of lead and range and makes special application of the various points to the different birds commonly shot in this country. A chapter is included on trap shooting and the book closes with a forceful and common-sense presentation of the etiquette of the field.

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